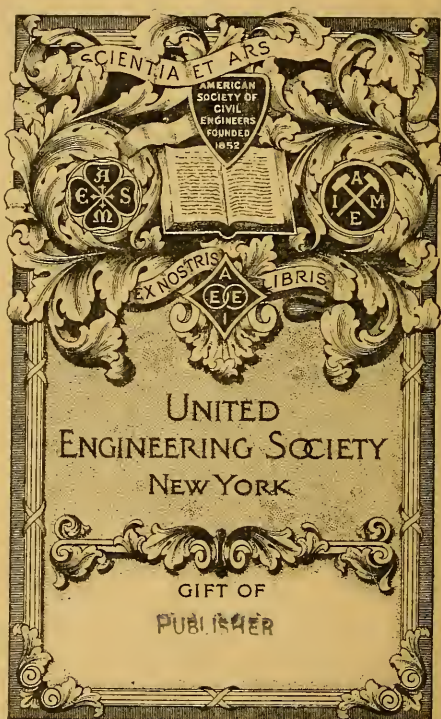


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THE BUILDING LAW OF THE  
CITY OF BOSTON.



Allen & E. Higgins, 24 5

## ERRATA.

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Page 168, section 114, should read as follows:

### NOTICES.

(No Plumbing to be done without a Permit from the Commissioner.)

SECT. 114. Every plumber, before doing any work in a building, shall, except in the case of repair of leaks, file in the office of the commissioner, upon blanks for that purpose, an application for a permit, and if required by the commissioner a plan or sketch of the work to be performed; and no such work shall be done in any building without a written permit from the commissioner.





## ERRATA.

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Page 111, section 38, eleventh line:

Add after word "wood" the following —"studding, the space between the studs filled solid the full height with brick,"

Change word "of" to "with" before the word "wood" in the eleventh line.

Page 86, section 23, paragraph 2, line 3. —Word "help" should be "keep."

Page 63, section 15, paragraph 114.—Formula should be

$$fc = \frac{2M}{jkb d^2} = \frac{2pfs.}{k}$$







# THE BUILDING LAW OF THE CITY OF BOSTON.

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BEING ACTS OF 1907, CHAPTER 550, AS AMENDED,  
ALSO GENERAL AND SPECIAL ACTS RELATING  
TO BUILDINGS AND THEIR MAINTENANCE,  
USE AND OCCUPANCY.



CITY OF BOSTON  
BUILDING DEPARTMENT  
Room 901, City Hall Annex  
1921



Compiled, Codified and Indexed by

CHARLES S. DAMRELL,  
*Clerk of Building Department, City of Boston.*

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Approved.

HERBERT A. WILSON,  
*Building Commissioner.*

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# THE BUILDING LAW OF THE CITY OF BOSTON.

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## CHAPTER 550, ACTS OF 1907 — AS AMENDED.

### AN ACT RELATIVE TO THE CONSTRUCTION, ALTERATION AND MAINTENANCE OF BUILDINGS IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

#### SECTION 1.

PAR. 1.— There shall be in the city of Boston a department to be called the building department, which shall be under the charge of the building commissioner. The commissioner, who shall have had at least five years' experience as an architect, a builder, or a civil engineer, shall be appointed by the mayor, for a term of five years. He shall receive such salary as shall be fixed by the city council, with the approval of the mayor.

PAR. 2.— The present officers and employees of the building department, except the board of appeal, shall hold their several offices and positions until removed or discharged according to law.

PAR. 3.— The commissioner may, with the approval of the mayor, appoint such number of inspectors, employees, and assistants as the city council shall, from time to time, determine. No person shall be appointed as inspector of construction who has not had at least five years' experience as a builder, civil engineer, or architect, or as a superintendent or foreman or a competent mechanic in charge of construction.

PAR. 4.— The commissioner may appoint as his deputy an inspector in the department who shall, during the

Sect. 1, Par. 4.]

absence or disability of the commissioner, exercise all the powers of the commissioner. No officer or employee connected with the department shall be interested in the doing of work or the furnishing of material or appliances for the construction, alteration, or maintenance of any building, or in the making of plans or of specifications therefor, unless he is the owner thereof or a member of a board within the building department. No such officer or employee shall be engaged in any work which is inconsistent with his duties or with the interests of the department.

[1913, c. 704, sect. 1.]

PAR. 5.— The clerk of the department shall, under the direction of the commissioner, keep a record of the business of the department, and the commissioner shall submit to the mayor a yearly report of such business. The records of the department shall be open to public inspection. The commissioner may require plans and specifications of any proposed structure or for the alteration of any structure or building to be filed with him, duplicates of which, when approved by the commissioner, shall be kept at the building during the progress of the work. Such duplicates shall be open to the inspection of any inspector in said department.

#### PERMITS.

PAR. 6.— The commissioner shall grant permits for the construction, alteration, removal or tearing down of buildings or structures, and for plumbing, gas fitting, and the setting and maintenance of steam boilers and furnaces when applications for the same are made and filed in conformity with law.

PAR. 7.— All permits issued by the commissioner shall be on printed forms approved by him.

#### WORK MAY BE STOPPED.

PAR. 8.— If the commissioner finds that the terms of a permit are being violated, he may, after notice mailed to



Sect. 1, Par. 8.]

the person to whom the permit was issued, order the whole or any part of the work, which is being done under the permit, to be stopped, and such work shall not be resumed until the terms of the permit have been complied with.

#### FORMS FOR APPLICATIONS.

PAR. 9.—All applications for permits under the provisions of this act shall be in writing, on forms furnished by the department. The commissioner may require the material facts set forth in the same to be verified by the oath of the applicant; he may also require, in his discretion, a survey of a lot on which any proposed building is to be erected to be filed with the application. Every application shall state the name and address of the owner.

### SECTION 2.

#### RECORD OF VIOLATIONS.

PAR. 1.—The commissioner, or one of his inspectors, shall examine as often as is practicable every building in the course of construction or alteration, and shall make a record of all violations of this act and of all other matters relative thereto. The publication of such records with the consent of the commissioner shall be privileged.

### SECTION 3.

#### RECORD OF UNSAFE BUILDINGS.

PAR. 1.—The commissioner, or one of his inspectors, shall examine any building reported as dangerous or damaged, and shall make a record of such examination, stating the nature and estimated amount of the damage, and the purpose for which the building was used, and in case of fire the probable origin thereof; and shall examine all buildings in respect to which applications have been made for permits to raise, enlarge, alter, or repair, and shall make a record of every such examination.

Sect. 4, Par. 1.]

## SECTION 4.

### PLACARDS.

PAR. 1.— The commissioner, or one of his inspectors, shall inspect every building or other structure or anything attached to or connected therewith which he has reason to believe is not provided with sufficient means of egress in case of fire satisfactory to the commissioner, exists in violation of any provision of this act or is unsafe or dangerous to life, limb, or adjoining buildings, and if he finds it not provided with sufficient means of egress in case of fire satisfactory to the commissioner, or to exist in violation of any provision of this act, or unsafe or dangerous, he shall forthwith in writing notify the owner, agent, or any person having an interest therein, to secure the same, to provide sufficient means of egress in case of fire or to comply with the provisions of this act which is being violated, and may affix in a conspicuous place upon its external walls a notice of its dangerous condition or of its condition as a fire-trap or of its being a common nuisance within the provisions of this act. The notice shall not be removed or defaced without his consent.

[1914, c. 205, sect. 1.]

[1919, c. 155, sect. 1, Special Act.]

### BUILDINGS VACATED.

PAR. 2.— The commissioner may with the written approval of the mayor order any building which in his opinion is unsafe, not provided with sufficient means of egress in case of fire or exists in violation of any provision of this act, to be vacated forthwith.

[1914, c. 205, sect. 1.]

## SECTION 5.

### COMMISSIONER MAY SECURE BUILDINGS.

PAR. 1.— The person notified as provided in the preceding section shall provide sufficient means of egress in case of

Sect. 5, Par. 1.]

fire satisfactory to the building commissioner, or shall comply with the provisions of this act which is being violated, or shall secure or remove said building, structure, attachment or connection forthwith. If the public safety so requires, the commissioner, with the approval of the mayor, may at once enter the building or other structure which he finds unsafe or dangerous, the land on which it stands or the abutting land or buildings, with such assistance as he may require, and secure or remove the same and may erect such protection for the public by proper fence or otherwise as may be necessary, and for this purpose may close a public highway. Before beginning the removal of any building or other structure, the building commissioner shall give notice by mail to the owner of his right to the material upon request. If the owner claims the material, he shall remove the same within ten days after the building or structure is taken down, and if he fails to do so, the building commissioner may dispose of the material.

[1914, c. 205, sect. 2.]

[1919, c. 155, sect. 2, Special Act.]

[1920, c. 91, sect. 1.]

## SECTION 6.

### BOARD OF APPEAL.

PAR. 1.— There shall be in said department a board to be called the board of appeal. Said board shall consist of five members appointed by the mayor in the following manner: One member from two candidates, one to be nominated by the Real Estate Exchange and Auction Board and one by the Massachusetts Real Estate Exchange; one member from two candidates, one to be nominated by the Boston Society of Architects and one by the Boston Society of Civil Engineers; one member from two candidates, one to be nominated by the Master

Sect. 6, Par. 1.]

Builders Association and one by the Contractors and Builders Association; one member from two candidates to be nominated by the Building Trades Council of the Boston Central Labor Union; and one member selected by the mayor. These appointments shall be subject to confirmation by the board of aldermen. The appointments first made shall be for the terms of one, two, three, four, and five years, respectively, so that the term of one member shall expire each year. All subsequent appointments shall be for the term of five years. Vacancies shall be filled in the same manner in which original appointments are made. Each member of said board shall be paid ten dollars per day for actual service but not more than one thousand dollars in any one year. No member shall act in any case in which he is interested, and in case any member is so disqualified, or is absent from illness or other cause, the remaining members shall designate a substitute.

[1910, c. 631, sect. 1.]

PAR. 2.— All the members of said board shall be residents of or engaged in business in Boston.

PAR. 3.— Every decision of the board shall be in writing and shall require the assent of at least three members.

## SECTION 7.

### APPEALS.

PAR. 1.— An applicant for a permit whose application has been refused may appeal therefrom within *ninety* days. A person who has been ordered by the commissioner to incur any expense may within *thirty* days after being notified of such order appeal therefrom by giving to the commissioner notice in writing of his appeal. Such notice or a certified copy thereof shall at once be transmitted by the commissioner to the board of appeal. After notice given to such parties as the board shall order,



Sect. 7, Par. 1.]

a hearing shall be had, and the board shall affirm, annul, or modify said refusal or order. The board may vary the provisions of this act in specific cases which appear to them not to have been contemplated by this act although covered by it, or in cases where manifest injustice is done, provided that the decision of the board in such a case shall be unanimous and shall not conflict with the spirit of any provision of this act.

PAR. 2.—The decision shall specify the variations allowed and the reasons therefor, and shall be filed in the office of the commissioner within *ten* days after the hearing. A certified copy shall be sent by mail or otherwise to the applicant and a copy kept publicly posted in the office of the commissioner for two weeks thereafter. If the order or refusal of the commissioner is affirmed, such order or refusal shall have full force and effect. If the order or refusal is modified or annulled, the commissioner shall issue a permit in accordance with such decision.

PAR. 3.—The provisions of this section shall also apply to any similar action or order of the commissioner of wires, under the provisions of chapter two hundred and sixty-eight of the acts of the year eighteen hundred and ninety-eight, or of any amendment thereof or addition thereto, except that in respect thereto the words "commissioner of wires" shall be substituted for the word "commissioner."

[1920, c. 440, sect. 3.]

## SECTION 8.

### PERMITS — TESTS.

PAR. 1.—*Permits.*—Before a permit is granted to erect any building except temporary buildings or buildings of minor importance, the commissioner may demand such further drawings, strain sheets, and description as will clearly show the entire construction, assumptions, calcu-

## Sect. 8, Par. 1.]

lations of stresses and all other structural details. Such details shall be in the form required by the commissioner, and calculation sheets shall be signed by the architect, engineer, contractor or other person responsible for them.

PAR. 1. *a.*—The commissioner shall not delay the issuance of a building permit if the plans submitted conform to the laws as to egress, class of construction and general arrangements, provided that the plans are accompanied by drawings showing the structural design and by a statement that the plans and designs conform to all the requirements of the law as to strength, stresses, strains, loads and stability and are signed and sworn to by the architect or engineer who made the calculations. The commissioner may examine, or cause to be examined, the structural design submitted, and may require such changes in size or material as may be necessary to comply fully with the requirements of this act.

PAR. 1. *b.*—Permits for general repairs, for minor alterations not involving extensive structural changes, and for small buildings of the second or third class, may be issued upon presentation of the application on a special blank for the purpose.

PAR. 2.—*Systems not Covered by this Act.*—If an applicant for a permit to build desires to use as a substitute for the materials or methods covered by this act materials or methods of construction or maintenance not covered by it, he shall present to the commissioner plans, formulas, and such other information, and shall make such tests or present satisfactory evidence of such tests, as the commissioner may require. Such systems shall not be used until after the commissioner has issued general regulations fixing the methods to be followed, but no such regulation shall have the effect of altering the working stresses for any material herein mentioned or of reducing the fireproofing requirements of this act.

Sect. 8.]

PAR. 3.— It shall be the duty of the board of appeal to submit to the mayor on or before the first day of February in each year a report giving a summary of all decisions of the board, together with such recommendations for revision of the law as the board may deem advisable. The commissioner shall cause the report to be printed as a separate document for public distribution.

PAR. 4.— Any requirement necessary for the strength or stability of any proposed structure or for the safety of the occupants thereof, not specifically covered by this act, shall be determined by the commissioner, subject to appeal.

PAR. 5.— *Testing*.— The commissioner may order loading tests to be made, at the expense of the owner, on any structure or part thereof, at such time and in such manner as will satisfactorily demonstrate to him that the unit stresses in any materials do not exceed those permitted under this act. Concrete construction shall be capable of bearing a live and dead load equivalent to twice that for which it was designed without causing permanent deformation.

PAR. 6.— No such test on the structure shall be required, however, until notice thereof in writing has been given by the commissioner to the person to whom the building permit was issued.

PAR. 7.— *Load Test*.— When the strength of any floor construction cannot be determined by the methods prescribed in this section or by the application of accepted engineering formulas, the safe uniformly distributed carrying capacity shall be taken as one sixth of the total load causing failure to a full-sized construction with the load applied at two points, each at one third of the span from the ends of the span.

PAR. 8.— *Fire Tests*.— In testing the fireproof qualities of any floor construction, at least one panel of the

## Sect. 8, Par. 8.]

proposed maximum span, carrying a live load of at least one hundred and fifty pounds per square foot, shall be subjected to a fire continuously for four hours at an average temperature of seventeen hundred degrees Fahrenheit, followed by an application for at least ten minutes of a hose stream from a one and one eighth inch nozzle at sixty pounds nozzle pressure, without appreciable deterioration or the passage of flame through the floor during the test.

[1918, c. 179, sect. 1, Special Act.]

[1920, c. 266, sect. 1.]

## SECTION 9.

## BUILDINGS ALLOWED IN BUILDING LIMITS.

PAR. 1.—The building limits of the city of Boston as they now exist shall continue until changed by ordinance, and the city council may by ordinance from time to time extend and define them, and may establish other limits in any part of the city within which every building built after the establishment thereof shall be of the first or second class. This restriction shall not apply to wharves, nor to buildings not exceeding twenty-seven feet in height on wharves, nor to market sheds or market buildings not exceeding the said height, nor to elevators for the storage of coal or grain, if the external parts of such buildings, elevators or other structures are covered with slate, tile, metal, or other equally fireproof material, and the mode of construction and the location thereof are approved by the commissioner. Temporary structures to facilitate the prosecution of any authorized work may be erected under such conditions as the commissioner may prescribe. Single and two-family dwellings not to be occupied and not intended, arranged, or designed to be occupied, by more than two families, may be built of third-class construction or of composite construction in all parts of the



Sect. 9, Par. 1.]

city of Boston not included in the building limits of the city as they existed prior to the twenty-second day of September in the year nineteen hundred and thirteen; but no such building shall occupy more than sixty per cent of the area of the lot upon which it is situated, and all such buildings shall be constructed with pitched roofs not less than thirty degrees with the horizontal.

[1914, c. 782, sect. 1.]

### THIRD CLASS BUILDINGS.

PAR. 2.—Buildings of the third class in the city of Boston may be reconstructed, altered, enlarged, repaired and extended so as to cover a greater area of land: *provided*, that the reconstruction, alteration, enlargement, or extension conforms to the requirements of the law in respect to new buildings of like character; and, *provided*, also, that not more than sixty per cent of the lot is covered.

[1915, c. 352, sect. 1, Special Act.]

[1917, c. 221, Special Act.]

[1918, c. 179, sect. 2, Special Act.]

## SECTION 10.

### EXEMPTIONS FROM ACT.

PAR. 1.—The provisions of this act shall not apply to public highway and railway bridges, quays, or wharves nor to buildings on land ceded to the United States or owned and occupied by the Commonwealth, nor to the Suffolk County court house, jail, or house of correction, nor to railroad stations, nor to portable or permanent school buildings erected and maintained by the school-house department except as provided in section seventeen of this act and amendments thereof or additions thereto nor to voting booths erected and maintained by the board of election commissioners; and also provided that permits from the building commissioner for the erection of

Sect. 10, Par. 1.]

school buildings shall be required and that such buildings shall be subject to the inspection of the building department.

[1915, c. 352, sect. 2, Special Act.]

[1921, c. 60, sect. 1.]

PAR. 2.—Except as otherwise provided by law, the provisions of this act shall not be held to deprive the board of health, the police commissioner, the board of street commissioners, the board of park commissioners, the board of examiners of gas fitters, the commissioner of wires, or the fire commissioner of the city of Boston of any power or authority which they have at the date of the passage of this act, or of the remedies for the enforcement of the orders of said boards or officers; unless such powers, authorities, or remedies are inconsistent with the provisions of this act; nor to repeal any existing law, not herein expressly repealed, except so far as it may be inconsistent with the provisions of this act.

## SECTION 11.

### DEFINITIONS.

In this act the following terms shall have the meanings respectively assigned to them as follows:

PAR. 1.—*First Class Building*.—A first class building shall consist of fireproof material throughout, with floors constructed of iron, steel or reinforced concrete beams, filled in between with terra cotta or other masonry arches or with concrete or reinforced concrete slabs; wood may be used only for under and upper floors, windows and door frames, sashes, doors, interior finish, hand rails for stairs, necessary sleepers bedded in the cement, and for isolated furrings bedded in mortar. There shall be no air space between the top of any floor arches and the floor boarding.

Sect. 11.]

PAR. 2.—*Second Class Building*.— All buildings not of the first class, the external and party walls of which are of brick, stone, iron, steel, concrete, reinforced concrete, concrete blocks, or other equally substantial and fireproof material.

PAR. 3.—*Third Class Building*.— A wooden frame building.

PAR. 4.—*Composite Building*.— A building partly of second class and partly of third class construction. Composite buildings may be built under the same restrictions as, and need comply only with the requirements for, third class buildings as to fire protection and exterior finish.

PAR. 5.—*Masonry*.— Masonry shall include such parts of a structure as are constructed with stone, bricks of burnt clay, cement, or sand lime, hollow blocks of burnt clay or concrete, and stone or cinder concrete, both plain and reinforced work.

PAR. 6.—*Foundation*.— That part of a wall below the level of the street curb, or, if a wall is not on the street, that part of the wall below the level of the highest ground next to the wall, or, in the discretion of the commissioner, that part of a party or partition wall below the cellar floor.

PAR. 7.—*Underpinning*.— In third class buildings the wall reaching from the foundation proper to the under side of the sills.

PAR. 8.—*Height of a Building*.— The vertical distance of the highest point of the roof above the mean grade of the curbs of all the streets upon which it abuts, and if it does not abut on a street, above the mean grade of the ground adjoining the building.

PAR. 9.—*Party Wall*.— A wall that separates two or more buildings, and is used or adapted for the use of more than one building.

PAR. 10.—*Partition Wall*.— An interior wall of masonry in a building.

Sect. 11.]

PAR. 11.— *Thickness of Wall*.— The minimum thickness of such wall.

PAR. 12.— *Story of a Building*.— That part of a building between the top of any floor beams and the top of the floor or roof beams next above.

PAR. 13.— *Basement*.— That story of a building not more than forty per cent of which is below the grade of the street.

PAR. 14.— *Cellar*.— That part of a building more than forty per cent of which is below the grade of the street, and in third class buildings that part of the building which is below the sills.

PAR. 15.— *Gas Fitting*.— The work of putting together any fittings, pipes or fixtures or other appliances which are to contain gas for heat, light or power purposes and will be subject to inspection under existing laws.

[1918, c. 179, sect. 3, Special Act.]

## SECTION 12.

### REQUIREMENTS FOR ALL BUILDINGS.

#### *Permits.*

PAR. 1.— No building, structure or foundation shall be constructed or altered without a permit, and such work shall be done in accordance with drawings bearing the approval of the commissioner.

#### *Excavations to be Supported.*

PAR. 2.— Every structure in process of construction, alteration, repair or removal, and every neighboring structure or portion thereof affected by such process or by any excavation, shall be sufficiently supported during such process.

PAR. 3.— The commissioner may take such measures as the public safety requires to carry these provisions into effect.



Sect. 12.]

*Leaders.*

PAR. 4.— All buildings shall have leaders sufficient to discharge the roof water in such a manner as not to flow upon any public way or any neighboring property. Such leaders may project into a public way not over seven inches.

*Chimneys — Height Above Roof.*

PAR. 5.— Every chimney flue shall be carried to a height sufficient to protect adjoining buildings from fire and smoke, and, unless the roof is covered with incombustible material, shall extend at least four feet above the highest point of contact with the roof.

*Egress to Roof.*

PAR. 6.— Every permanent building more than twenty feet high having a flat roof shall have permanent means of access to the roof from the inside by an opening not less than two feet by three feet, with a fixed stepladder.

*Egress Required.*

PAR. 7.— Every building shall have, with reference to its height, condition, construction, surroundings, character of occupation and number of occupants, reasonable means of egress in case of fire, satisfactory to the commissioner, except that in all factories or workshops hereafter built or altered, of second class construction, where ten or more persons are employed above the second floor, one exit shall consist of a fireproof stairway enclosed in incombustible material. No building hereafter erected shall be occupied or permitted to be occupied until said means of egress have been provided in accordance with plans and drawings approved by the building commissioner.

[1912, c. 369, sect. 1.]

PAR. 8.— Water pipes in every building shall be properly protected from frost.

Sect. 12.]

*Chimney, Walls and Lining of.*

PAR. 9.— All chimneys of masonry construction shall have walls at least eight inches thick, or be constructed of four-inch brick walls with a suitable flue lining.

*Water-Closets.*

PAR. 10.— Every building used for habitation shall have such number of water-closets as the board of health may require; every building where persons are employed shall have at least one water-closet for every twenty persons therein employed, and in any building where both sexes are employed, separate accommodations shall be furnished for men and women. Every enclosure containing one or more water-closets shall be provided with adequate ventilation to the outer air either by window or by suitable light shaft.

*Outside Finish.*

PAR. 11.— In every first and second class building all of the outside finish shall be of incombustible material, except window and door frames, and except finish about show windows in the first story. Where store fronts are carried up more than one story the columns and lintels shall be of, or finish with, incombustible material; but in no case shall store fronts be carried more than two stories, unless the same are constructed and finished throughout with fireproof material, except window and door frames.

PAR. 12.— Every ventilating flue shall be constructed of, or lined with, incombustible material.

*Floor Ties.*

PAR. 13.— Every floor in second class buildings shall have its beams tied to the walls and to each other with wrought-iron straps or anchors at least three eighths of

Sect. 12, Par. 13.]

an inch thick by one and one half inches wide and not less than eighteen inches long, so as to form continuous ties across the building not more than ten feet apart. Walls running parallel, or nearly parallel, with floor beams shall be properly tied once in ten feet to the floor beams by iron straps or anchors of the size above specified.

*Wooden Headers and Trimmers.*

PAR. 14.— Every wooden header or trimmer more than four feet long, carrying a floor load of over seventy pounds per square foot, shall, at connections with other beams, be framed or hung in stirrup irons, and joint-bolted. All tail beams and similar beams of wood shall be framed or hung in stirrup irons.

*Windows on Fire Escapes, Kitchenettes. Sprinklers.*

PAR. 15.— All walls, piers and columns acting as supports below the first floor of all buildings hereafter built shall be of masonry or metal. In all buildings hereafter erected, where outside means of egress are to be constructed, the building commissioner may order, when he deems it necessary, all the window openings in the same to be protected by metal frames and sash and wire glass, and all doors leading to such outside means of egress and the frames of the same to be of metal or metal covered. If doors are glazed, they shall be glazed with wire glass. Every kitchen, kitchenette or room used or adapted to be used for cooking purposes, either by coal, electric, gas or oil stoves, in every building hereafter erected, remodelled or enlarged, shall be not less than six feet in the least dimension, and have a floor area of not less than forty-eight square feet. Every such kitchen, kitchenette or room to be used or adapted to be used for cooking purposes shall be lighted and ventilated by window openings in an external wall direct to the open air, or if such kitchen,

Sect. 12, Par. 15.]

kitchenette or room is of not more than seventy square feet in area upon a vent shaft, as defined in section forty-two and any acts amending or affecting the same, with no opening from any toilet room into said vent shaft, and such window openings shall equal in size in the aggregate at least one eighth of the area of the floor of such room. When gas, coal or oil stove ovens, broilers or water heaters are connected to a ventilating flue, the flue shall be constructed of brick walls not less than eight inches thick, or with walls four inches thick lined with terra-cotta flue lining at least one inch thick. The building commissioner may order the basements of any mercantile building hereafter erected to be provided with a system of automatic sprinklers, approved by him as to location, arrangement and efficiency. Any alteration shall conform to the requirements of this act for new buildings only to the extent of the alteration made.

[1914, c. 782, sect. 2.]

[1921, c. 289, sect. 1.]

## SECTION 13.

### PROHIBITIONS.

#### *Wooden Buildings in Building Limits.*

PAR. 1.— No alteration or repair of a wooden building within the building limits shall be made without a permit from the commissioner, and no permit to increase the height or ground area of such a building shall be granted, unless such building is on the corner of two intersecting ways, in which case the building commissioner shall have authority to grant a permit, nor shall a permit for alterations or repairs be granted if the estimated cost of the proposed alterations or repairs exceeds one half of the cost of a like new building.

[1915, c. 352, sect. 3, Special Act.]



Sect. 13.]

PAR. 2.— No wooden building, outside the building limits, shall be moved to any position within the building limits.

*Recess in Wall.*

PAR. 3.— No recess or chase shall be made in any external or party wall so as to leave the thickness at the back less than eight inches.

*Timbers in Party Wall.*

PAR. 4.— No roof or floor timber entering a party wall shall have less than four inches of solid brickwork between it and the end of any other timber.

PAR. 5.— No part of any roof shall be constructed in such a manner as to discharge snow, ice, or other material upon a public street or alley.

*Observation Stands.*

PAR. 6.— No elevated staging or stand for observation purposes shall be constructed or occupied upon the roof of any building.

*Chimneys.*

PAR. 7.— No chimney shall be corbelled from a wall more than the thickness of the wall.

PAR. 8.— No chimney shall be hung from a wall which is less than twelve inches thick.

PAR. 9.— No masonry shall rest upon wood, except piles and mud sills.

PAR. 10.— No part of any floor timber shall be within two inches of any chimney.

PAR. 11.— No studding or furring shall be within one inch of any chimney.

*Boilers — Furnaces.*

PAR. 12.— No furnace or boiler for heating shall be placed upon a wooden floor.

Sect. 13.]

PAR. 13.— No smoke pipe shall project through any external wall or window.

PAR. 14.— No steam, furnace, or other hot air pipes shall be carried within one inch of any wood work unless such pipes are double or otherwise protected by incombustible material.

PAR. 15.— No combustible partition shall be within four feet of the sides and back or within six feet of the front of any boiler, carrying a pressure of over ten pounds, unless the partition is covered with incombustible material which extends to the full height of the partition from the end or back of the boiler to at least five feet in front of it. In such case the distance shall be not less than two feet from all the sides and five feet from the front of the boiler, and all lath and plaster and wooden ceiling beams over the boiler and to a distance of not less than four feet in front of all such boilers shall be covered with incombustible material.

[1914, c. 782, sect. 3.]

*Observation Stand.*

PAR. 16.— No observation stand shall be constructed or maintained except in accordance with plans approved by the commissioner.

*Closet Under Stairs.*

PAR. 17.— No closet of any kind shall be constructed under any staircase leading from the cellar or basement to the first story.

*Boiler Under Public Way.*

PAR. 18.— No boiler shall be placed or maintained under any public way.

*Projections.*

PAR. 19.— No part of any structure, except cornices, permanent awnings, string courses, window caps and sills,

Sect. 13, Par. 19.]

bay windows, under such terms, conditions, regulations and restrictions as may be required by the mayor and board of aldermen, and outside means of egress, as otherwise provided, and signs as provided in chapter three hundred and fifty-two of the acts of the year eighteen hundred and ninety-five, shall project over any public way or square. No cornice or bay window shall so project more than three feet; nor more than twelve inches over a way of a width of thirty feet or less.

#### *Stables.*

PAR. 20.— No building within forty feet of the property of any adjoining owner shall be erected for or converted to use as a stable, unless such use is authorized by the board of health after a public hearing. Written notice of such hearing shall be given to the adjoining owners, and published at least three times in at least two newspapers published in Boston, ten days at least before the hearing.

#### *Roofing Materials.*

PAR. 21.— No material other than brick, tile, slate, metal, asbestos shingles, or slag, shall hereafter be used to cover or roof any building, or the tops, sides and outsides of the frames of any dormer window, or any other projection of the roof of any building, except wooden cornices on wooden frame buildings; but on flat roofs *composition of asbestos and asphalt* or tar and gravel may be used, or such other composition of fire-resisting roofing as the commissioner may authorize. Asphalt shingles may also be used: *provided*, that each package of shingles is inspected and labelled and that the shingles are made and laid in conformity with the specifications promulgated by the National Board of Fire Underwriters as modified from time to time by said board; and *provided, further*, that within the lines at present constituting the building

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limits of the city of Boston such asphalt shingles may be used only on buildings of third class construction, and that they shall not be used within the building limits of said city as they existed prior to September twenty-second, nineteen hundred and thirteen. Nothing in this section shall be construed to prohibit the use of materials approved by the commissioner for repairing any roof now covered with wooden shingles or to prohibit covering with such approved materials the roofs of buildings less than sixteen feet in height: *provided*, that the building is not altered in height or otherwise generally reconstructed.

[1914, c. 782, sect. 3.]

[1915, c. 352, Special Act, sect. 3.]

[1916, c. 277, Special Act.]

[1918, c. 104, Special Act.]

*Lot Line — Distance from First and Second Class Buildings  
to be Kept.*

PAR. 22.— No part of any first or second class building hereafter erected, except the eaves and cornices, shall be nearer than five feet to the line of any adjoining lot on any side on which such building has any opening in the outer wall thereof unless all such openings are protected by wire glass set in metal frames and sash.

## SECTION 14.

### QUALITY AND STRENGTH OF MATERIALS. METHODS OF COMPUTATION.

PAR. 1.— All materials shall be of such quality for the purposes for which they are to be used as to insure, in the judgment of the commissioner, ample safety and security to life, limb and neighboring property. The commissioner shall have power to reject all materials which in his



## Sect. 14, Par. 1.]

judgment are unsuitable, and may require tests to be made by the architect, engineer, builder, owner or other interested persons. Any test thus required shall be made under the supervision or direction of the commissioner, and at the expense of the owner.

PAR. 2.—*Brick*.—Brick may be of hard-burned clay, sand lime or cement and, except for nogging, fire-stopping and nonbearing or curtain walls not exposed to the weather, shall be hard and strong, of quality approved as satisfactory by the commissioner. Second-hand bricks shall be thoroughly cleaned before being used.

PAR. 3.—Hard brick tested for approval shall develop an average ultimate compressive strength of three thousand pounds per square inch. Brick shall be tested flatwise (half bricks permitted) and the average shall be taken on at least five samples, none of which must fall below twenty-five hundred pounds per square inch. The compressive strength of wet brick after forty-eight hours in water must be at least two thirds that of dry brick, except that, when the lower strength is above three thousand pounds per square inch, the loss in strength may be ignored.

PAR. 4.—Before brick or other masonry materials are submitted to absorption tests, they shall be dried to practically constant weight at a temperature between two hundred and twenty-five and two hundred and fifty degrees Fahrenheit and shall not be fully immersed when placed in water.

PAR. 5.—*Terra Cotta Floor Tile*.—Terra cotta floor tile, when tested on end and faced with Portland cement, shall give an average compressive strength of not less than twenty-five hundred pounds per square inch of net area. The average strength shall be computed from the results of tests of ten average tiles.

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PAR. 6.— *Building Blocks*.— The term “block” as used in this section shall mean any shape of brick or tile which forms a hollow or cellular wall.

PAR. 7.— Concrete, hollow and two-piece building blocks shall be made of Portland cement and suitable aggregates in such proportion as to develop the following ultimate compressive strength at twenty-eight days, shall average one thousand pounds per square inch of gross sectional area of the block as used in the wall and shall not fall below seven hundred pounds per square inch in any test, when testing at least six ordinary samples. In case of hollow building blocks, the gross cross sectional area shall be considered as the product of the length by the width of the block. No allowance shall be made for air spaces of the block. The allowable working stress for such block shall not exceed one hundred pounds per gross square inch.

PAR. 8.— Terra cotta building blocks shall be whole, sound and hard burned and shall develop an ultimate crushing strength per square inch of gross area of not less than twelve hundred pounds when tested with the cells placed vertically, and three hundred pounds with the cells placed horizontally.

PAR. 9.— The allowable working stress for such blocks shall not exceed one hundred pounds and fifty pounds per gross square inch respectively.

PAR. 10.— The absorption of building blocks to be used for bearing or enclosing walls shall not exceed twelve per cent in forty-eight hours as an average, or more than fifteen per cent in any case.

PAR. 11.— *Concrete Aggregates*.— The fine aggregates shall be sand or crushed screenings passing a one fourth inch screen. The coarse aggregate shall consist of gravel, crushed stone, slag or cinders retained on a one fourth

Sect. 14, Par. 11.]

inch screen. Cinders or slag may be used for aggregate only for walls of one story buildings, for floor slabs, roof slabs, partitions, fireproofing, fire stopping and filling.

PAR. 12.—*Sand*.—Sand or other fine aggregate for concrete shall be of such quality that mortar of one part Portland cement and three parts sand by weight shall show a tensile strength of not less than seventy per cent of the strength of mortar made on the same proportions with the same cement and standard Ottawa sand. If the tensile strength of such mortar is less than eighty per cent of that made with Ottawa sand, additional cement shall be used in such amount as may be required by the commissioner. The commissioner may require such tests when, in his judgment, they are necessary.

PAR. 13.—*Stone*.—Stone for concrete shall be clean, hard and durable. For reinforced concrete it shall be of suitable size for the work and shall be small enough to allow the concrete to pass readily between and easily surround the reinforcement, and fill all parts of the forms.

PAR. 14.—*Gravel*.—Run-of-bank gravel shall be used only when and as approved by the commissioner.

PAR. 15.—*Cinders and Slag*.—Cinders shall be composed of hard, clean, vitreous clinkers, reasonably free from sulphides, unburned or partly burned coal and ashes. Slag shall be clean and hard. Cinders and slag shall be of suitable size for the work.

PAR. 16.—*Portland Cement*.—Portland cement shall conform to the Standard Specifications of the American Society for Testing Materials as from time to time revised.

PAR. 17.—*Lime*.—Lime shall be free from ashes, clinker and other foreign material and shall not be air slaked.

PAR. 18.—*Lime Mortar*.—Lime mortar shall be made of slaked lime or hydrated lime with proper proportion of sand.

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PAR. 19.— *Cement-Lime Mortar*.— Cement-lime mortar shall be thoroughly mixed and made of one part Portland cement, not more than two parts slaked lime or hydrated lime and not more than eight parts of sand by volume, but mixtures with larger proportion of cement shall be allowed higher stress as hereinafter provided.

PAR. 20.— *Portland Cement Mortar*.— Portland cement mortar shall be thoroughly mixed and made of one part Portland cement and not more than three parts of sand by volume. Lime putty, or hydrated lime, may be added to an amount equal to fifteen per cent of the volume of the cement.

PAR. 21.— *Concrete*.— Concrete shall mean an approved mixture of Portland cement, water and fine and coarse aggregate.

PAR. 22.— *Mixing*.— The ingredients shall be thoroughly mixed and the mixing shall continue until the cement is thoroughly distributed and the mass is uniform in color. For reinforced concrete the consistency shall be such that the concrete will entirely enclose the reinforcement, but shall not be so wet as to cause separation of the ingredients.

PAR. 23.— *Rubble Concrete*.— Rubble concrete shall mean an approved mixture of Portland cement, water, fine and coarse aggregate to which stones are added after depositing. When one-man stones are used to form rubble concrete, there shall be not less than three inches between the stones and the forms, and between edges of adjacent stones. When stones larger than one-man size are used to form rubble concrete there shall be not less than six inches between the stones and forms, and between edges of adjacent stones. Stones shall be clean and wet and shall be deposited in concrete already in place, before the latter has begun to set.



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PAR. 24.— In piers no stone shall be larger than one quarter of the horizontal cross section of the pier. Rubble concrete shall not be used for any projecting footing.

PAR. 25.— *Joints*.— Joints formed between portions of concrete placed at different times shall be made in such a manner as not to weaken the completed structure. Whenever fresh concrete joins concrete which is set, or partly set, the surface of the old concrete shall be rough, clean and thoroughly wet.

PAR. 26.— *Use of Concrete*.— Concrete shall be used immediately after mixing, it shall not be placed in the work after it has begun to harden, and it shall be deposited in such manner and under such regulations as to secure a compact mass of the best quality for the proportions used. Forms shall remain until the concrete has hardened sufficiently to carry its load safely, and shall be removed without damage to the concrete.

PAR. 27.— *Inspection of Concrete*.— The commissioner may require an applicant for a permit for the structural use of concrete to have a competent inspector, satisfactory to the commissioner, at all times on the work while concrete is being mixed, or deposited and such inspector shall make daily reports to the commissioner on the progress of the work.

PAR. 28.— *Steel*.— Steel for all structural work in buildings, except reinforced concrete work, shall conform to the requirements of the Standard Specifications for Structural Steel for Buildings of the American Society for Testing Materials, as from time to time revised.

PAR. 29.— *Wrought Iron*.— Wrought iron for structural work in buildings shall conform to the requirements of the Standard Specifications for Wrought Iron Plates, Class B of the said society as from time to time revised.

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PAR. 30.— *Cast Iron*.— Cast iron for all structural work in buildings shall conform to the requirements of the Standard Specifications for Medium Gray Iron Castings of the said society as from time to time revised.

PAR. 31.— *Cast Iron Columns*.— Cast iron columns shall not be used in the structural frames of buildings whose height exceeds two times the least width of base, nor in any building over one hundred feet high. Cast iron columns shall be faced at ends to a true surface perpendicular to the axis to give full bearing for the cross section of the column.

PAR. 32.— All hollow cast iron columns, except when open at both ends and without flanges, shall have two three eighths of an inch holes drilled on the top or bottom side of the column as cast, if the columns are cast on side one hole about twelve inches each side of the center of the length of the column, to exhibit thickness of the shell. Columns cast on end shall have two three eighths of an inch holes drilled, at an angle of ninety degrees to each other at the middle of the column, to exhibit thickness of shell. Additional holes shall be drilled when required by the commissioner.

PAR. 33.— *Cast Iron Bases and Lintels*.— Cast iron bases or shoes shall be planed on top. Bases which rest on structural steel members shall be planed top and bottom. The thickness of metal shall be not less than one inch. The inclination of the outer edge of the ribs with the horizontal shall be not less than forty-five degrees. Whenever a side of the bed plate exceeds three feet in length a reinforcing flange at least three inches high shall be provided along such edge of the plate.

PAR. 34.— Cast iron lintels shall be not less than three fourths of an inch in thickness and shall not be used for spans exceeding six feet.

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PAR. 35.—*Timber*.—All timber for structural purposes shall conform to such specifications as may be promulgated by the commissioner but shall be free from defects such as injurious ring or round shakes, and through shakes that extend to the surface, from unsound and loose knots, and knots in groups that will materially impair the strength, rot, worm holes and defects caused by manufacture.

PAR. 36.—*Classes of Timber*.—“Dense” and “sound” classes of timber shall be as defined by the American Society for Testing Materials in their Standard Definitions of Terms relating to Structural Timbers, section three, as revised in nineteen hundred and fifteen.

*Strength of Materials.*

PAR. 37.—*Piers*.—Any body of masonry less than four feet long in its greatest horizontal dimension shall be called a pier. The height of a pier between openings having a continuous wall above or below them shall be assumed equal to the height of the opening. The height of a pier or wall supporting floors or roofs shall be assumed as the distance from top of footing or floor to under side of floor or roof beams.

PAR. 38.—*Stresses*.—The stresses in materials used in the construction of all buildings, produced by their own weight and the loads hereinafter specified, shall not exceed the limits assigned in this section.

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PAR. 39.—*Stresses for Brickwork.*

MORTAR. CEMENT TO BE PORTLAND. (PARTS MEASURED BY VOLUME.)	Piers of Height not more than Six Times their Least Dimension, and Walls of Height not more than Nine Times their Least Di- mension (Tons per Square Foot).	Piers of Height from Six to Twelve Times their Least Dimension, and Walls of Height from Nine to Twenty Times their Least Di- mension (Tons per Square Foot).
Cement mortar as specified in this section.....	20	18
2 parts cement, 1 part hydrated or slaked lime, 8 parts sand.....	16	14
1 part cement, 1 part hydrated or slaked lime, 6 parts sand.....	14	12
1 part cement, 2 parts hydrated or slaked lime, 8 parts sand.....	12	10
Lime mortar.....	8	6

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PAR. 40.—*Stresses for Concrete.*

CEMENT TO BE PORTLAND. THE VOLUME GIVEN FOR AGGREGATE TO BE THE VOLUME OF FINE AND COARSE AGGREGATE MEASURED SEPARATELY BEFORE MIXING AND PROPORTIONED SO AS TO GIVE A DENSE MIXTURE.	Piers of Height not more than Six Times their Least Dimension, and for Walls of Height not more than Nine Times their Least Dimension (Tons per Square Foot).	Walls of Height from Nine to Twenty Times their Least Dimension (Tons per Square Foot).
1 part cement, 6 parts aggregate.....	32½	25
1 part cement, 7½ parts aggregate.....	26	21
1 part cement, 9 parts aggregate.....	21	17



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PAR. 41.— No plain concrete bearing pier shall have a greater height unsupported laterally than six times, and no brick pier greater than twelve times, its least dimension. No brick or plain concrete bearing wall, unless it is properly braced by cross walls, piers or other means, shall have a greater height unsupported than twelve times its least dimension. When compression is applied to a portion of a surface of concrete of which the area is at least twice that to which the load is applied, a stress of fifty per cent in excess of those allowed by the above table may be used in bearing.

Par. 42.— *Stresses for Grout and Stone Masonry.*

CEMENT TO BE PORTLAND. (PARTS MEASURED BY VOLUME.)	Tons per Square Foot.
Grout, 1 part cement, 1 part sand, when not less than two feet in least lateral dimension, not more than one half inch joints.	72
Granite masonry, with mortar of 1 part cement, 2 parts sand, not more than one half inch joints.	72
Granite masonry, cement mortar, not more than one half inch joints.	60
Limestone and marble masonry, cement mortar, not more than one half inch joints.	40
Sandstone masonry, cement mortar, not more than one half inch joints.	30

PAR. 43.— *Provided, however,* that in stone masonry columns or in piers of excessive height, the loads may be modified by the commissioner.

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PAR. 44.—*Stresses for Structural Steel and Iron.*

KIND OF STRESS.	WORKING STRESSES PER SQUARE INCH.	
	Steel.	Cast Iron.
Bearing, direct (including bearing of stiffeners)	20,000	16,000
Bearing, pins and shop rivets.....	24,000	—
Bearing, field rivets.....	20,000	—
Bearing, bolts.....	16,000	—
Bending (where top flange is stayed laterally at distance not greater than 20 times the width of flange).	16,000	10,000 <sup>1</sup>
Bending, pins and rivets.....	24,000	4,000 <sup>2</sup>
Shearing (including gross section of plate girder webs).	10,000	—
Shearing, pins and rivets.....	10,000	2,000
Shearing, bolts.....	8,000	—
Direct tension.....	16,000	—

<sup>1</sup> Compression.<sup>2</sup> Tension.*Compression Flange of a Riveted Plate Girder.*

PAR. 45. — The compression flange of a riveted plate girder shall not be of a smaller gross section than the tension flange. When the top flange of the steel plate girder, beam or channel is not stayed laterally at distances of twenty times its breadth the above stress on extreme fibre shall be reduced as follows:—

$l/b$	20.	25.	30.	35.	40.
Stress per square inch.....	16,000	15,200	14,400	13,600	12,800

$l/b$	45.	50.	55.	60.	65.	70.
Stress per square inch.	12,000	11,200	10,400	9,600	8,800	8,000

Where  $l$  is length of flange in inches. $b$  is breadth of flange in inches.

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*Steel Compression Members.*

PAR. 46.—Steel compression members shall not have a greater value of  $l/r$  than one hundred and sixty, nor have metal (except for filling) less than one fourth of an inch for interior columns, nor with metal less than five sixteenths of an inch for exterior columns, nor with metal less than five sixteenths of an inch for exterior columns enclosed in masonry. The stress due to eccentric or transverse combined with direct loading shall not exceed sixteen thousand pounds per square inch. For centrally loaded steel compression members the safe load in pounds per square inch shall be as follows:—

PAR. 47.—*Steel Compression Members.*

$l/r$	80 or less.	90.	100.	110.
Stress per square inch.....	12,000	11,000	10,000	9,000.

$l/r$	120.	130.	140.	150.	160.
Stress per square inch.....	8,000	7,000	6,000	5,000	4,000

Where  $l$  is the length of the column in inches

$r$  is the radius of gyration in inches taken around the axis about which the column will bend.

PAR. 48.—*Cast Iron Compression Members.*—Cast iron compression members shall not have a greater value of  $l/r$  than seventy nor a smaller outside diameter or side than six inches, nor a greater unsupported length than twenty-four times their least dimension or diameter: *provided, however, that columns supporting roof loads only*



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may have a value of  $l/r$  not greater than ninety-six and an unsupported length of not more than thirty times the least lateral dimension or diameter. They shall not have metal less than *three fourths* of an inch, nor thinner than *one twelfth* of the greatest lateral dimension or side. The stresses due to eccentric or transverse loading, combined with those due to central loading, shall not exceed nine thousand pounds per square inch.

PAR. 49.—Cast iron columns shall not be used where the loading is so eccentric as to cause tension, nor in garages, nor in places where they are likely to receive impact from vehicles.

PAR. 50.—Wherever the core of a column has shifted more than one quarter of the thickness of the shell, the strength shall be computed assuming the thickness of metal all around to be equal to the thinnest part.

PAR. 51.—For centrally loaded cast iron compression members the safe load in pounds per square inch shall be as follows:

*Working Stress.*

$l/r$	10.	20.	30.	40.	50.
Stress per square inch.....	8,600	8,200	7,800	7,400	7,000
$l/r$	60.	70.	80.	90.	96.
Stress per square inch.....	6,600	6,200	5,800	5,400	5,160

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PAR. 52.—*Stresses of Timber.*

	STRESS PER SQUARE INCH FOR TIMBERS USED IN DRY PLACES.					
	Southern Yellow Pine, Dense Grade.	Southern Yellow Pine, Sound Grade.	Douglas Fir, Sound Grade.	Spruce.	White Pine.	Oak (White).
Bearing across grain.....	350	250	200	200	200	500
Bearing with grain.....	1,200	900	1,000	750	700	900
Bending.....	1,600	1,200	1,100	1,000	1,000	1,400
Shear with grain.....	150	100	100	100	80	200

PAR. 53.—*Timber Compression Members.*—Timber compression members shall not be used of a greater unstayed length than thirty times their least dimension for isolated columns or forty times their least dimension for columns in partitions or truss members. The stresses due to eccentric or transverse loading combined with those due to central loading shall not exceed the maximum stress allowed in the table below.

For centrally loaded timber compression members the safe load per square inch shall be as follows: —

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## PAR. 45.—

LENGTH DIVIDED BY LEAST DIMENSIONS.	Southern Yellow Pine, Dense Grade.	Southern Yellow Pine, Sound Grade.	Douglas Fir, Dense Grade.	Spruce.	White Pine.	Oak (White).
10 or less.....	1,000	750	840	620	585	750
15.....	900	675	750	560	525	675
20.....	800	600	660	500	465	600
25.....	700	525	580	440	405	525
30.....	600	450	500	380	350	450
35.....	500	375	420	320	290	375
40.....	400	300	330	250	230	300

PAR. 55.— *Other Materials*.—Stresses for materials and forms of material, not herein mentioned, shall be determined by the commissioner.

PAR. 56.— *Wind Bracing*.—Provisions for wind bracing shall be made where it is necessary in good practice or as determined by the commissioner.

PAR. 57.— *Cutting*.—No cutting for piping or any other purpose shall be done which would reduce the strength of any part of the structure below what is required by the provisions of this act.

PAR. 58.— *Methods of Computation*.—Methods for reinforced concrete are given in section fifteen. For all other materials, the following methods shall be used:—

PAR. 59.—The span of beams, girders, or trusses shall be taken as the distance from centre to centre of the bearings. If connected to the side of a column, the span shall be taken to the centre of the column.

PAR. 60.—If a tension piece is loaded eccentrically or transversely the maximum combined fiber stress shall not exceed the allowed stress in tension.

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PAR. 61.—An eccentric load upon a column shall be taken as affecting eccentrically only the length of column extending to the next point below at which the column is stayed securely in the direction of the eccentricity.

PAR. 62.—If a piece is exposed to tension and compression at different times it shall be proportioned and connected to resist the maximum of each kind of stress.

PAR. 63.—Base-plates, bearing plates, and grillage beams shall be figured on the assumption that the maximum bending moments are under the centre of bearing.

[1918, c. 179, sect. 4, Special Act.]

## SECTION 15.

### REINFORCED CONCRETE.

PAR. 1.—*Definition*.—Reinforced concrete shall mean an approved mixture of Portland cement, water and fine and coarse aggregate, reinforced by steel.

PAR. 2.—*Portland Cement and Aggregate*.—The Portland cement and fine and coarse aggregate for reinforced concrete work shall conform to the quality of materials as defined in section fourteen of this act.

PAR. 3.—*Reinforcements*.—Steel for reinforcement shall conform to the Standard Specifications for Steel Reinforcement Bars of the American Society for Testing Materials, as from time to time revised. It shall be free from mill scale and loose rust and shall not be coated in such manner as to weaken the bond.

PAR. 4.—*Mixing*.—The ingredients shall be thoroughly mixed, and the mixing shall continue until the cement is thoroughly distributed and the mass is uniform in color. The consistency shall be such that the concrete will flow freely about and entirely enclose the reinforcement, but shall not be so wet as to cause separation of the ingredients in handling.



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PAR. 5.—*Inspection*.—Such portions of section fourteen as apply to inspection shall be taken to apply to this section also.

PAR. 6.—*Forms*.—Forms shall be sufficiently tight to prevent any considerable loss of material in the pouring.

PAR. 7.—*Placing*.—Such portions of section fourteen as apply to the placing of concrete shall be taken to apply to this section also. Concrete shall not be deposited in forms until the reinforcement has been put in place and secured against displacement.

PAR. 8.—Columns shall be poured without any interruption to the bottom side of beams or girders which they support, or to the bottom of the flare in flat slab construction. Special care shall be taken in their pouring that no void may result.

PAR. 9.—Columns and walls shall be poured not less than three hours in advance of the beams, girders, or slabs, which they support. All columns of the same type in a story shall be of concrete mixed in the same proportions.

PAR. 10.—Structural slabs shall be poured the full thickness at the time of pouring floor.

PAR. 11.—*Stopping Work*.—Proper precautions shall be taken in stopping concrete work to stop it at the points of low shear.

PAR. 12.—*High and Low Temperature*.—When fresh concrete is exposed to a hot or dry atmosphere or wind special precautions to prevent premature drying shall be taken.

PAR. 13.—Concrete shall not be deposited when the temperature is below thirty-two degrees Fahrenheit, unless adequate precautions are taken to prevent freezing.

PAR. 14.—*Fire Protection*.—Main reinforcement in floor slabs shall be protected by a minimum of three fourths of an inch of concrete; in beams, girders, columns



Sect. 15, Par. 14.]

and walls by one and one half inches from the surface of the concrete to the surface of the main reinforcement.

PAR. 15.— In columns the outer one and one half inches of concrete shall be regarded as fireproofing which shall be assumed to carry no stress.

PAR. 16.— *Rust Protection*.— In foundations and retaining walls the steel shall be protected and on the side toward the earth or water by a minimum of three inches of concrete.

PAR. 17.— *Spacing of Reinforcement*.— Slab reinforcement bars in tension shall be not farther apart horizontally than two and one half times the total thickness of the slab. In beams and girders the lateral spacing of parallel bars shall be not less than three diameters from centre to centre, and the clear space between two layers of bars shall not be less than one inch.

PAR. 18.— *Basis for Design*.— Calculations shall be made with reference to working stresses and safe loads rather than with reference to ultimate strength and ultimate loads, and shall be based on the following assumptions:—

PAR. 19.— (a) A plane section before bending remains plane after bending.

PAR. 20.— (b) The modulus of elasticity of concrete in compression, within the usual limits of working stresses, is constant. The distribution of compressive stress in beams, therefore, is rectilinear.

PAR. 21.— (c) The tensile strength of the concrete in direct resistance to bending is ignored.

PAR. 22.— (d) Under compressive stress the two materials are stressed in proportion to their moduli of elasticity.

PAR. 23.— (e) Initial stress in the reinforcement due to contraction or expansion in the concrete is neglected.

PAR. 24.— *Span Length*.— The span length for beams and slabs simply supported shall be taken as the distance

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from centre to centre of supports, but need not be taken to exceed the clear span plus the depth of beam or slab. For continuous or restrained beams or slabs, built monolithically into supports, the span length may be taken as the clear distance between faces of supports. Brackets shall not be considered as reducing the clear span in the sense here intended, except that when brackets which make an angle of forty-five degrees or more with the axis of a restrained beam or the plane of a slab are built monolithically therewith, the span may be measured from the section where the total depth is at least one third more than the depth at the edge of the bracket. Maximum negative moments are to be considered as existing at the end of the span as here defined.

PAR. 25.— *Bending*.— Bending moments for uniformly distributed dead and live loads, in beams and slabs reinforced in one direction only shall be computed upon the following assumptions, where “w” is the total dead and live load per linear foot and “l” is the span length: —

PAR. 26.— (a) for a single span freely supported the bending at mid-span is

$$\frac{wl^2}{8}$$

PAR. 27.— (b) for a single span restrained at the ends, the bending at mid-span is

$$\frac{wl^2}{12}$$

PAR. 28.— (c) for two equal continuous spans freely supported, the bending at mid-span is

$$\frac{wl^2}{10}$$

and at central support it is

$$\frac{wl^2}{8}$$

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PAR. 29.—(d) for two equal continuous spans restrained at supports, the bending at mid-span is

$$\frac{wl^2}{12}$$

and at central support it is

$$\frac{wl^2}{10}$$

PAR. 30.—(e) for three or more equal continuous spans freely supported, the bending at mid-span of the end span and at the first interior support is

$$\frac{wl^2}{10}$$

and the bending at mid-span of interior spans and at other interior supports is

$$\frac{wl^2}{12}$$

PAR. 31.—(f) for three or more equal continuous spans restrained at supports, the bending at the first interior support for beams is

$$\frac{wl^2}{10}$$

and for slabs is

$$\frac{wl^2}{12}$$

and the bending at all other interior supports and at mid-span of all spans is

$$\frac{wl^2}{12}$$

PAR. 32.—(g) at the restrained ends of continuous beams a negative bending of

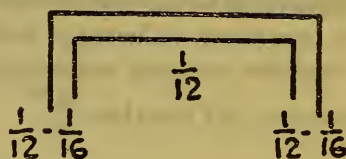
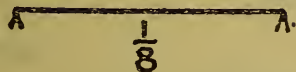
$$\frac{wl^2}{16}$$

shall generally be assumed, but this shall be increased to not more than  $\frac{wl^2}{12}$  for small beams running into large columns.

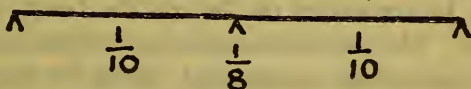
Sect. 15, Par. 32.]

(b)

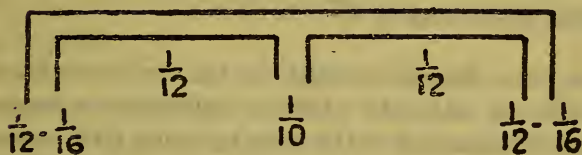
(a)



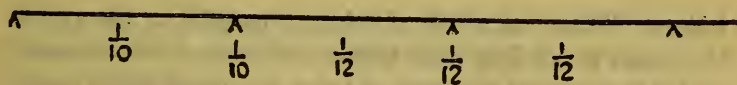
(c)



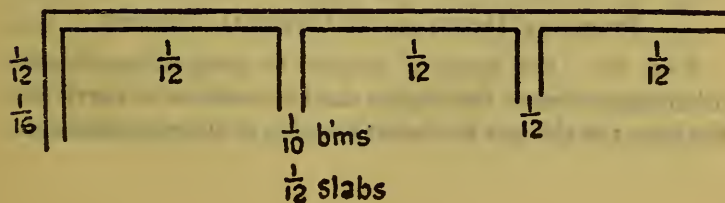
(d)



(e)



(f)



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## BEAMS AND SLABS.

PAR. 33.— Beams and slabs shall be considered as restrained at the ends when they frame monolithically into a structure sufficiently stiff and strong to introduce a negative bending moment into the beam at the end in amount not less than  $\frac{wl^2}{16}$ .

## CONTINUOUS BEAMS.

PAR. 34.— For continuous beams subject to other than uniformly distributed loads, the positive bending moment shall first be computed as though the beam were freely supported. The positive moment may then be reduced in the same proportion as specified above for beams loaded uniformly, and provision shall be made at the restrained ends for negative moments having the same ratio to the positive moment first computed that the negative moments specified above bear to  $\frac{wl^2}{8}$ .

PAR. 35.— Beams parallel to the main reinforcement of a one-way slab into which no other beams frame, and which are restrained at the ends by being built monolithically into supporting columns, shall be designed for bending moments at the ends equal to  $\frac{wl^2}{12}$ , and at mid-span as

follows: When the width of columns parallel to the axis of the beam is not less than fifteen per cent of the distance, centre to centre of columns, or twice the depth of the beam,  $m = \frac{wl^2}{20}$ ; otherwise  $m = \frac{wl^2}{16}$ .

## SPANS OF UNUSUAL OR UNEQUAL LENGTH.

PAR. 36.— For spans of unusual or unequal length and other special cases the design shall be such as to carry out the intent of this act to the satisfaction of the commissioner.



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PAR. 37.—*Slabs Supported on Four Sides.*—For slabs, supported on four sides and reinforced in both directions the distribution of loads shall be determined by the formula

$$r = \frac{l}{b} - 0.5$$

where

$b$  is the breadth of slab.

$l$  is the length of slab.

$r$  is the proportion of load carried by the transverse reinforcement.

#### REINFORCEMENT IN SLABS.

PAR. 38.—In placing reinforcement in such slabs account shall be taken of the fact that the bending moment is greater near the centre of the slab than near the edges, and two thirds of the calculated moments shall be assumed as carried by the centre half of the slab and one third by the outside quarters.

PAR. 39.—Beams supporting rectangular slabs reinforced in both directions shall be assumed to take the proportions of load as determined by the formula in this section, the distribution of the load being assumed to vary in accordance with the ordinates of a parabola having its vertex at mid-span.

PAR. 40.—*Floor and Roof Openings.*—Openings in floors and roofs shall be so framed as not to exceed the allowable stresses.

PAR. 41.—*Depth.*—In roof slabs the total depth shall not be less than three inches and in floor slabs four inches.

PAR. 42.—In "T" beams the depth below the slab shall not exceed eight times the thickness of the slab adjacent to the stem.

PAR. 43.—Cinder concrete slabs shall not be less than four inches thick; they shall not exceed eight feet in span.

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PAR. 44.—*Self-Centring*.—Reinforcing materials which are self-centring shall not be used in spans exceeding eight feet. Fireproofing under self-centring reinforcement may be of Portland cement plaster.

PAR. 45.—*Bending in Supporting Members*.—If a beam or floor slab is assumed as fixed or partially restrained at a support, the column, wall, or other structure furnishing such restraint shall be proportioned to resist the stresses thereby induced.

PAR. 46.—“*T*” *Beams*.—Where adequate bond and shearing resistance between slab and web of beam is provided, the slab may be considered an integral part of the beam, but its effective width shall not exceed one fourth part of the span length of the beam, nor shall its overhanging width on either side of the web exceed six times the thickness of the slab.

PAR. 47.—*Columns*.—Columns or piers of concrete shall be reinforced when the unsupported height exceeds six times the least gross dimension, and no reinforced concrete column shall have an unsupported height of more than twelve times its least gross dimension, except with stresses reduced from those allowed by this act in accord-

ance with the ratio  $\frac{24-\frac{h}{d}}{12}$  where  $h$  is unsupported height

and  $d$  is least dimension, and  $\frac{h}{d}$  shall not in any case exceed eighteen. The maximum effective area of columns shall be taken as the area within the outer one and one half inches of concrete covering, or, in the case of hooped columns or columns reinforced with structural shapes, it shall be taken as the area within the circle enclosing the spiral or the polygon enclosing the structural shapes. Longitudinal reinforcement shall be assumed to carry stress in proportion to the respective moduli of elasticity as given in this act.

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### EXTERIOR COLUMNS AND THEIR REINFORCEMENT.

PAR. 48.—Exterior columns and their reinforcement shall be so proportioned as to withstand bending in addition to the direct load without exceeding the fiber stresses specified for beams elsewhere in this act.

### REINFORCED CONCRETE BUILDINGS.

PAR. 49.—Reinforced concrete buildings may be supported by structural steel or cast iron columns, fireproofed in first class construction as provided elsewhere in this act. Brackets shall be provided to transmit the load from the floors to the columns. Such columns shall be computed as follows:—

#### BRACKETS.

PAR. 50.—(a) If the brackets are placed immediately below the floor the structural steel or cast iron columns shall be assumed to carry the load of all the floors above.

PAR. 51.—(b) If the brackets are placed immediately above a floor the structural steel or cast iron columns shall be assumed to carry all the load above the brackets, and the floor or floors below the brackets shall be carried on reinforced concrete encasing the metal, designed in accordance with the requirements of this act, to the next bracket below or to the foundation. In this case, however, the surrounding concrete shall be so separated from the steel or cast iron as to permit the separate action of both.

### CIRCULAR HOLLOW COLUMNS.

PAR. 52.—Circular hollow steel or wrought iron columns filled with concrete shall be allowed to carry a load equal to the capacity of the metal casing plus the capacity of the concrete filling. The average unit stress in the casing shall be that specified elsewhere in this act for columns, and that in the concrete filling shall be in the

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same ratio to the unit stress in the casing which the modulus of elasticity of the concrete bears to that of the casing.

PAR. 53.—Columns with longitudinal reinforcement only shall have a steel area of not less than one per cent and not more than four per cent of the required effective area, and shall be allowed the stresses given in this act. Longitudinal reinforcement bars shall be straight and shall be secured against lateral displacement by steel ties not less than one fourth of an inch in diameter and placed not farther apart than sixteen diameters of the bars, nor more than twelve inches.

#### COLUMNS WHICH HAVE LONGITUDINAL REINFORCEMENT.

PAR. 54.—Columns which have longitudinal reinforcement to an amount not less than one per cent and not more than four per cent of the effective area, and which also have hoops or spirals to an amount not less than one per cent of the volume of the enclosed core, spaced not farther apart in the clear than one sixth of the diameter of the enclosed core, and in no case more than two and one half inches, shall be allowed the stresses given in this act: *provided, however*, that no such column shall have a height greater than ten diameters of the enclosed core. The ends of hoops or spirals shall be united in such a way as to develop their full strength. The hoops or spirals shall be securely fastened to the longitudinal reinforcement or to approved spacers.

PAR. 55.—*Combination Floors*.—Concrete floors with permanent blocks or forms of incombustible material with ribs of reinforced concrete between shall conform to the requirements of this act so far as they are applicable, but the blocks or forms shall not be assumed as taking stress. If a slab not less than two inches thick above the blocks or forms is cast monolithic with the rib, the rib and slab may be considered as a T section. If such con-



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struction forms a flush ceiling, or if a plastered ceiling on metal lath is suspended below the ribs, the fireproofing for such construction shall be that required for slabs.

PAR. 56.—*Working Stresses*.—The following table gives the compressive strength in pounds per square inch which shall be assumed as the basis for design, a bag of cement weighing ninety-four pounds being assumed to measure one cubic foot in proportioning material, and the values given for aggregate to be the combined volume of fine and coarse aggregate measured separately.

MIXTURE.	1:3.	1:4½.	1:6.	1:7.	1:7½.	1:9.
Stone concrete.....	3,300	2,800	2,200	—	1,800	1,400
Cinders or slag concrete..	1,000	875	750	675	625	—

#### ALLOWABLE STRESSES.

PAR. 57.—In all computations allowable stresses shall be used, based as, hereinafter specified, upon assumed ultimate strengths as given above, and no concrete shall be used which, when made under laboratory conditions into test cylinders eight inches diameter and sixteen inches long and tested in compression at an age of twenty-eight days, does not show a strength at least equal to that given in the table.

PAR. 58.—Concrete one year old shall be considered to have a compressive strength twenty-five per cent greater than that given in the table for concrete of the same grade and proportions.

PAR. 59.—*Bearing*.—When compression is applied to a portion of a concrete surface of which the area is at least twice that to which the load is applied, a stress of thirty-five per cent of the compressive strength fixed by this act shall be allowed.



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PAR. 60.—*Axial Compression*.—For concentric compression on columns with longitudinal reinforcement only, twenty-two and five tenths per cent of the compressive strength fixed by this act shall be allowed.

PAR. 61.—For concentric compression on columns the length of which does not exceed ten diameters of the core, with longitudinal reinforcement combined with hoops or spirals, thirty-five per cent of the compressive strength fixed by this act shall be allowed.

PAR. 62.—*Bending*.—Compression on extreme fiber in bending shall not exceed thirty-two and five tenths per cent of the compressive strength fixed by this act: *provided, however*, that adjacent to the supports of continuous beams or slabs thirty-seven and five tenths per cent may be used.

PAR. 63.—*Shear and Diagonal Tension*.—In the calculation of beams in which the maximum shearing stress in a section is used as the means of measuring the resistance to diagonal tension stress, the vertical shearing unit stress as computed by the formula  $v = \frac{V}{bjd}$ , where  $v$  is the shearing unit stress,  $V$  is the total shear,  $b$  is the breadth of the beam, and  $jd$  is the arm of the resisting couple, shall not exceed the following percentages of the respective compressive strengths fixed by this act.

#### BEAMS WITH HORIZONTAL BARS ONLY.

PAR. 64.—For beams with horizontal bars only and without web reinforcement, two per cent.

#### BEAMS WITH WEB REINFORCEMENT.

PAR. 65.—For beams with web reinforcement consisting of vertical stirrups looped about the longitudinal reinforcing bars in the tension side of the beam, suitably anchored in the compression side and spaced horizontally

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not more than one half the depth of the beam, or for beams in which longitudinal bars are bent up at an angle of not more than forty-five degrees nor less than twenty degrees with the axis of the beam and the points of bending are spaced horizontally not more than three fourths of the depth of the beam apart, or both, the web reinforcement being designed, in each case, to carry two thirds of the total shear, six per cent.

PAR. 66.—*Punching*.—Punching shear shall not exceed six per cent of the compressive strength fixed by this act.

PAR. 67. — *Bond*.—The bond stress between concrete and steel bars shall not exceed four per cent, except that the bond between concrete and approved deformed steel bars shall not exceed five per cent, and between concrete and drawn wire shall not exceed three per cent of the compressive strength fixed by this act.

PAR. 68.—*Steel*.—The tensile or compressive stress in steel shall not exceed sixteen thousand pounds per square inch in rods and twenty thousand pounds per square inch in drawn wire and other approved cold stretched fabric, except that in slabs of stone concrete the tensile stress in rods shall not exceed eighteen thousand pounds per square inch, and in drawn wire and other approved cold stretched fabric it shall not exceed twenty-two thousand five hundred pounds per square inch.

PAR. 69.—*Modulus of Elasticity*.—The modulus of elasticity of concrete shall be taken as —

$\frac{1}{30}$  that of steel for cinder concrete with a compressive strength of 1,000 pounds per square inch or less.

$\frac{1}{15}$  that of steel for stone concrete with a compressive strength of 2,200 pounds per square inch or less.

$\frac{1}{12}$  that of steel for concrete with a compressive strength greater than 2,200 pounds per square inch, but less than 2,900 pounds per square inch.

$\frac{1}{10}$  that of steel for concrete with a compressive strength

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of 2,900 pounds per square inch or more, the compressive strength referred to in all these cases being that fixed by this act.

PAR. 70.—*Footing General*.—Symmetrical, concentric column footings shall be designed for punching shear, diagonal tension and bending moment.

PAR. 71.—*Punching Shear in Footings*.—The area effective to resist punching shear in column footings shall be considered as the area having a width equal to the perimeter of the column or pier and a depth equal to seven-eighths the depth of footing from top to centre of reinforcing steel.

PAR. 72.—*Diagonal Tension in Footings*.—Shearing stresses as indicative of diagonal tension shall be measured in footings on vertical sections distant from the face of the pier or column equal to the depth of the footing from top to centre of reinforcing steel.

PAR. 73.—*Bending Moment in Footings*.—The bending moment in rectangular isolated column footings at a section taken at the edge of pier or columns shall be determined by multiplying the load on the cantilever projection by three eighths the distance from the edge of pier or column to the edge of footing. The section of maximum moment in a footing supporting a round column or pier shall be taken one eighth the radius from the tangent toward the centre. The effective area of concrete and steel to resist bending moment shall be considered as that within a width extending both sides of pier or column a distance equal to depth of footing plus one half the remaining distance to edge of footing, except that reinforcing steel crossing the section other than at right angles shall be considered to have an effective area determined by multiplying the sectional area by the sine of the angle between the bar and the plane of the section. The bond stress in the steel shall not exceed that allowed by this act.



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PAR. 74.—*Flat Slabs*.—Floor slabs supported upon columns without beams or girders and extending two or more bays in each direction shall conform to the following requirements.

PAR. 75.—*Capital*.—Columns may be provided with enlarged capitals. The horizontal width of capitals shall be taken where the vertical thickness is at least one and one half inches, and the contour of capitals shall not fall within that of an inverted cone or pyramid whose apex is on the centre line of the column, whose sides incline at forty-five degrees with the vertical, and whose base lies in a plane one and one half inches below the underside of the dropped panel and, if no dropped panel is used, below the underside of the slab, and has the same size and shape in plan as the capital. The width of capital in any direction shall not be less than one fifth the distance, centre to centre, of columns in that direction, and shall be such that the allowable unit stresses elsewhere specified in this act shall not be exceeded.

PAR. 76.—*Dropped Panel*.—A thickening of the slab on the underside in the vicinity of the columns is termed a dropped panel. The width of the dropped panel in any direction shall be not less than  $\frac{3}{4}$  that of the column capital. The depth of the dropped panel below the bottom of the slab shall be not more than half the slab thickness, but shall be such that the allowable unit stresses shall not be exceeded either in shear about the column capital or in bending. The allowable unit shear to be used shall be that specified for punching shear elsewhere in this act. The allowable compression in bending shall be that specified for extreme fibers adjacent to support in continuous beams.

PAR. 77.—*Slab Thickness*.—In flat slab construction, the minimum thickness of slab shall be not less than  $\frac{1}{40}$  in the case of roofs or  $\frac{1}{32}$  in the case of floors, of the distance from centre to centre of the columns in the longer direction. The thickness shall be such as to withstand the

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shear about the column capital or dropped panel without exceeding the allowable stress herein specified for punching shear.

PAR. 78.— *Bending*.— For the purpose of determining the bending in flat slab floors, the slab shall be considered as divided by lines parallel to the lines of columns into strips whose width is one half the distance,  $L$ , centre to centre, of columns measured at right angles to the span of strips. The centre line of alternate strips shall coincide with the centre line of the columns. These shall be known as A-strips. The other strips located midway between columns shall be known as B-strips. The span length of the strips shall be taken as the distance, centre to centre, of columns less two thirds the width of the column capital measured in the direction of the span.

#### A AND B STRIPS COMPRISING ANY PANEL WIDTH.

PAR. 79.— Provision shall be made in the A and B strips comprising any panel width for the whole bending moment specified, and the proportion of the whole provided for within each strip shall be not less than that given in the following table:—

	PER CENT.		
	A-Strip.	B-Strip.	Either Strip.
Positive moment, dropped panel.....	60	25	15
Positive moment, no dropped panel.....	55	25	20
Negative moment, dropped panel.....	80	15	5
Negative moment, no dropped panel....	65	20	15

PAR. 80.— *Interior Bays*.— If

$$l = \text{span as given above} = L - \frac{2}{3}c$$

where  $c$  = diameter of column capital

$w$  = total load per square foot



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whether the panels be square or oblong and in whichever direction the span be taken, the bending moments at the critical portions of interior bays shall be assumed as follows:—

PAR. 81.— *Positive Bending*.— The positive bending moment for a whole panel width shall be taken as

$$M = \frac{wLl^2}{25}$$

PAR. 82.— *Negative Bending*.— The negative bending moment for a panel width shall be taken as

$$M = \frac{wLl^2}{15}$$

PAR. 83.— *Wall Bays; Restraint*.— For wall bays when the wall is of reinforced concrete ( $l$  is the distance from the inside face of the exterior column to the centre of the interior column less one third the width of the interior column capital) the bending moment for strips running perpendicular to the wall shall be as follows:—

PAR. 84.— *Positive Bending*.— The positive bending moment for a panel width shall be taken as

$$M = \frac{wLl^2}{20}$$

PAR. 85.— *Negative Bending*.— The negative bending moment for a panel width at the interior line of columns shall be taken as:—

$$M = \frac{wLl^2}{12.5}$$

PAR. 86.— The negative bending moment for a panel at the wall shall in general be taken as:—

$$M = \frac{wLl^2}{30}$$

PAR. 87.— This may be increased, according to degree of restraint, up to  $\frac{wLl^2}{15}$  for complete restraint: *provided*, however, that in case the coefficient for negative bending at

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the wall is increased, the other two bending moment coefficients may be correspondingly decreased.

PAR. 88.—*Wall Bays; No Restraint.*—For wall bays supported on one edge upon brick walls or other construction incapable of providing adequate restraint in negative bending,  $l$  is the distance from the inner face of the wall to the centre of the interior column less one third the width of the interior column capital.

PAR. 89.—*Positive Bending.*—The positive bending moment for a panel width shall be taken as:—

$$M = \frac{wLl^2}{16}$$

PAR. 90.—*Negative Bending.*—The negative bending moment for a panel width at the interior column line shall be taken as:—

$$M = \frac{wLl^2}{10}$$

PAR. 91.—Negative bending along such walls shall be provided for by reinforcement in the top of the slab at right angles with the wall equal to four tenths per cent in floors and to two tenths per cent in roofs of the area of cross-section of the slab.

PAR. 92.—Bays discontinuous upon one or two adjacent sides shall be treated as wall bays.

PAR. 93.—When a flat slab is supported by a beam or wall on one or two sides, the half strip parallel with and adjacent to the beam or wall may be reinforced as half a B-strip.

PAR. 94.—The bending in exterior concrete columns supporting flat slab floors shall in general be taken as:—

$$\frac{wLl^2}{30} \text{ plus } \frac{Wh}{4},$$

or more up to

$$\frac{wLl^2}{15} \text{ plus } \frac{Wh}{4}$$

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in case of complete restraint, where  $W$  is the total load on the wall panel and  $h$  is the thickness of the exterior column.

PAR. 95.— For floors, half this bending shall be assumed as acting below and half above the slab; for roofs the whole bending acts below the slab.

PAR. 96.— *Brackets.*— Brackets or haunches shall be provided on exterior columns when necessary to transmit the shear and bending from the slab to the column.

PAR. 97.— *Interior Columns.*— The least dimension of interior concrete columns supporting flat slabs shall be not less than one fifteenth the span, centre to centre, of columns in the longer direction.

PAR. 98.— *Reinforcement.*— Reinforcement shall be provided at the critical sections of all strips in sufficient quantity to withstand the bending herein specified without exceeding the allowable unit stresses elsewhere specified in this act. Reinforcement lying obliquely to the axis of any strip shall be counted as having an area effective for that strip equal to its actual area of cross-section multiplied by the cosine of the angle which it makes with the axis of the strip.

PAR. 99.— *Bent Bars.*— No reinforcing for positive bending shall be bent up to the top of the slab further from the centre line of the column than one fourth  $L$  where  $L$  is the distance, centre to centre of columns in the direction of the reinforcing. Positive reinforcement in A-strips shall be provided to within  $0.15 L$  of the centre line of interior columns and extending to the inside face of wall columns; in B-strips shall be provided extending to within  $0.10 L$  of the interior column line and to the inside face of wall support. Negative reinforcement in A-strips shall extend beyond the centre line of the columns half the width of the column capital plus enough to develop the strength of the rods; at least one quarter of the negative reinforcement shall extend six inches beyond the quarter

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point of the panel or the fifth point of the span length. Negative reinforcement in B-strips shall extend forty diameters beyond the centre line of columns, and at least half thereof shall extend to the quarter point of the panel.

#### STRESS IN CONCRETE.

PAR. 100. For determining the stress in concrete due to the bending in each strip the width shall be taken as the width of the strip, except that for negative bending in A-strips when a dropped panel is used the width shall be that of the dropped panel.

PAR. 101.—*Wall Beams*.—Wall beams in flat slab construction shall be assumed to carry a width of floor equal to one quarter the clear span of the beam in addition to the weight of beam and wall. Such beams, when continuous, shall be designed for a negative bending at columns equal to  $\frac{wl^2}{12}$  and the positive bending at mid-span shall be assumed as follows:—

PAR. 102.—(a) When the width of the columns (parallel to the beam) is not less than fifteen per cent of the distance, centre to centre, of columns or twice the depth of the beam,

$$M = \frac{wl^2}{20}$$

PAR. 103.—(b) Otherwise,

$$M = \frac{wl^2}{16}$$

PAR. 104.—*Brick Walls*.—In case a flat slab is supported by a brick wall, the wall shall in general be four inches thicker than the minimum thickness otherwise required by this act, or have equivalent pilasters.

#### FORMULAS FOR REINFORCED CONCRETE CONSTRUCTION.

PAR. 105.—These formulas are based on the assumptions and principles given in section fifteen.



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## 1. STANDARD NOTATION.

PAR. 106.—(a) *Rectangular Beams.*

The following notation is recommended:

 $fs$  = tensile unit stress in steel; $fc$  = compressive unit stress in concrete; $Es$  = modulus of elasticity of steel; $Ec$  = modulus of elasticity of concrete;

$$n = \frac{Es}{Ec};$$

 $M$  = moment of resistance, or bending moment in general; $As$  = steel area; $b$  = breadth of beam; $d$  = depth of beam to centre of steel; $k$  = ratio of depth of neutral axis to depth,  $d$ ; $z$  = depth below top to resultant of the compressive stresses; $j$  = ratio of lever arms of resisting couple to depth,  $d$ . $jd$  =  $d - z$  = arm of resisting couple;

$$p = \text{steel ratio} = \frac{As}{bd}.$$

PAR. 107.—(b) *T-Beams.* $b$  = width of flange; $b'$  = width of stem; $t$  = thickness of flange.PAR. 108.—(c) *Beams Reinforced for Compression.* $A'$  = area of compressive steel; $p'$  = steel ratio for compressive steel; $fs'$  = compressive unit stress in steel; $C$  = total compressive stress in concrete; $C'$  = total compressive stress in steel; $d'$  = depth to centre of compressive steel; $z$  = depth to resultant of  $C$  and  $C'$ .PAR. 109.—(d) *Shear, Bond and Web Reinforcement.* $V$  = total shear; $V'$  = total shear producing stress in reinforcement; $v$  = shearing unit stress; $u$  = bond stress per unit area of bar;





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PAR. 113.—Fiber stresses,

$$f_s = \frac{M}{Asjd} = \frac{M}{pjbd^2} \dots \dots \dots (3)$$

PAR. 114.—

$$f_c = \frac{2M}{jkb d^2} = \frac{2pfs}{k} \dots \dots \dots (4)$$

PAR. 115.—Steel ratio, for balanced reinforcement,

$$p = \frac{1}{2} \cdot \frac{1}{\frac{f_s}{f_c} \left( \frac{f_s}{n f_c} + 1 \right)} \dots \dots \dots (5)$$

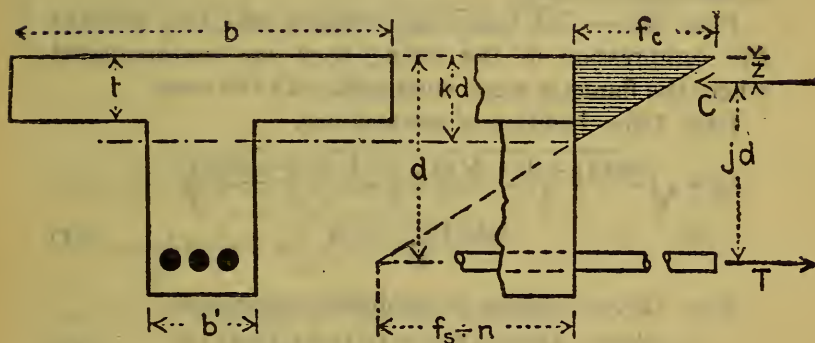
(b) *T-Beams.*

FIG. 2.

PAR. 116.—*Case I.* When the neutral axis lies in the flange, use the formulas for rectangular beams.

*Case II.* When the neutral axis lies in the stem.

The following formulas neglect the compression in the stem.

PAR 117.—Position of neutral axis,

$$kd = \frac{2ndAs + bt^2}{2nAs + 2bt} \dots \dots \dots (6)$$

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PAR. 118.— Position of resultant compression,

$$z = \frac{3kd - 2t}{2kd - t} \cdot \frac{t}{3} \dots \dots \dots (7)$$

PAR. 119.— Arm of resisting couple,

$$jd = d - z \dots \dots \dots (8)$$

PAR. 120.— Fiber stresses,

$$f_s = \frac{M}{A_s jd} \dots \dots \dots (9)$$

PAR. 121.—

$$f_c = \frac{Mkd}{bt(kd - \frac{1}{2}t)jd} = \frac{f_s}{n} \cdot \frac{k}{1 - k} \dots \dots \dots (10)$$

(For approximate results the formulas for rectangular beams may be used.)

PAR. 122.— The following formulas take into account the compression in the stem; they are recommended where the flange is small compared with the stem:

PAR. 123.— Position of neutral axis,

$$kd = \sqrt{\frac{2ndA_s + (b - b')t^2}{b'} + \left(\frac{nA_s + (b - b')t}{b'}\right)^2} - \frac{nA_s + (b - b')t}{b'} \dots \dots \dots (11)$$

PAR. 124.— Position of resultant compression,

$$z = \frac{(kdt^2 - \frac{2}{3}t^3)b + [(kd - t)^2(t + \frac{1}{3}(kd - t))]b'}{t(2kd - t)b + (kd - t)^2b'} \dots \dots (12)$$

PAR. 125.— Arm of resisting couple,

$$jd = d - z \dots \dots \dots (13)$$

PAR. 126.— Fiber stresses,

$$f_s = \frac{M}{A_s jd} \dots \dots \dots (14)$$

PAR. 127.—

$$f_c = \frac{2Mkd}{[(2kd - t)bt + (kd - t)^2b']jd} \dots \dots \dots (15)$$

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## (c) Beams Reinforced for Compression.

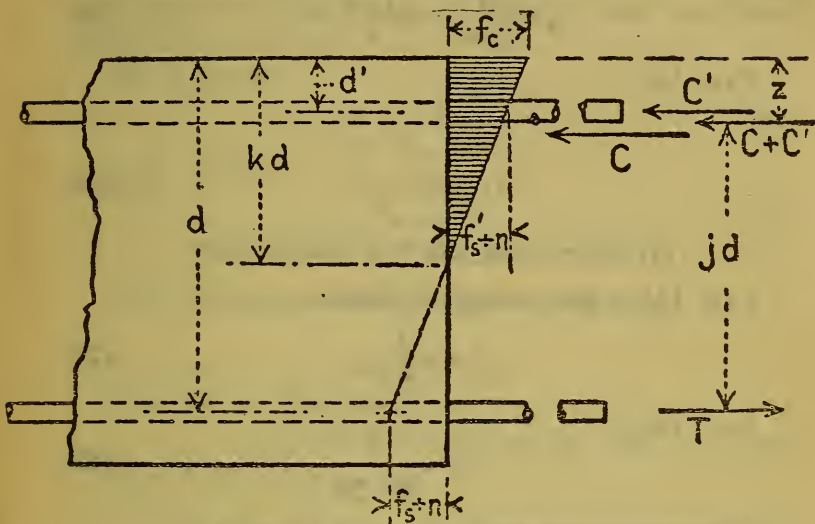


FIG. 3.

PAR. 128.— Position of neutral axis,

$$k = \sqrt{2n\left(p + p'\frac{d'}{d}\right) + n^2(p + p')^2} - n(p + p') \dots (16)$$

PAR. 129.— Position of resultant compression,

$$z = \frac{\frac{1}{3}k^3d + 2p'nd'\left(k - \frac{d'}{d}\right)}{k^2 + 2p'n\left(k - \frac{d'}{d}\right)} \dots (17)$$

PAR. 130.— Arm of resisting couple,

$$jd = d - z \dots (18)$$

PAR. 131.— Fiber stresses,

$$f_c = \frac{6M}{bd^2\left[3k - k^2 + \frac{6p'n}{k}\left(k - \frac{d'}{d}\right)\left(1 - \frac{d'}{d}\right)\right]} \dots (19)$$

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PAR. 132.—

$$f_s = \frac{M}{pjb d^2} = n f_c \frac{1-k}{k} \dots \dots \dots (20)$$

PAR. 133.—

$$f_s' = n f_c \frac{d'}{k} \dots \dots \dots (21)$$

(d) *Shear, Bond, and Web Reinforcement.*

PAR. 134.— For rectangular beams,

$$v = \frac{V}{bjd} \dots \dots \dots (22)$$

PAR. 135.—

$$u = \frac{V}{jd \cdot \sum o} \dots \dots \dots (23)$$

[For approximate results  $j$  may be taken at  $\frac{7}{8}$ .]

PAR. 136.— The stresses in web reinforcement may be estimated by means of the following formulas:

Vertical web reinforcement,

$$T = \frac{V's}{jd} \dots \dots \dots (24)$$

PAR. 137.— Bars bent up at angles between 20 and 45 deg. with the horizontal and web members inclined at 45 deg.

$$T = \frac{3}{4} \frac{V's}{jd} \dots \dots \dots (25)$$

PAR. 138.— In the text of the report\* it is recommended that two thirds of the external vertical shear (total shear) at any section be taken as the amount of total shear producing stress in the web reinforcement.  $V'$  therefore equals two thirds of  $V$ .

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\* Should read "law."



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PAR. 139.— The same formulas apply to beams reinforced for compression as regards shear and bond stress for tensile steel.

For T-Beams,

$$v = \frac{V}{b'jd} \dots \dots \dots (26)$$

PAR. 140.—

$$u = \frac{V}{jd \cdot \sum o} \dots \dots \dots (27)$$

[For approximate results  $j$  may be taken at  $\frac{7}{8}$ .]

(e) Columns.

PAR. 141.— Total safe load,

$$P = f_c(A_c + nA_s) = f_c A(1 + (n-1)p) \dots \dots \dots (28)$$

PAR. 142.— Unit stresses,

$$f_c = \frac{P}{A(1 + (n-1)p)} \dots \dots \dots (29)$$

PAR. 143.—

$$f_s = n f_c \dots \dots \dots (30)$$

[1918, c. 179, sect. 5, Special Act.]

## SECTION 16.

### STEEL CONSTRUCTION.

*Materials and Stresses.*— Materials, stresses and methods of computation shall be as provided in section fourteen.

PAR. 1.— *General Requirements.*— No metal thinner than one fourth of an inch shall be used except for fillers or beams and channel webs: *provided, however*, that sheet metal may be used in such buildings and under such restrictions as the commissioner may allow. Connections shall be designed to develop the full strength of the member under the conditions of loading even though the computed stress is less.

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*Rivets.*

PAR. 2.—Rivets shall be placed in accordance with good engineering practice. The diameter of rivet holes in tension members shall be assumed as one eighth of an inch larger than the rivet. Net sections shall be used in proportioning tension members.

PAR. 3.—*Beams and Girders.*—Every beam, channel, lintel or girder supported by a wall shall be properly anchored thereto, and shall have bearing plates if necessary to distribute the load properly at the stresses required by this act.

*Beams and Channels.*

PAR. 4.—Beams and channels acting as skew-backs for arches shall be designed to resist the lateral thrusts in addition to their vertical loads, and the tie rods, not less than three fourths of an inch in diameter, shall be placed as near the line of thrust as practicable, and in any event shall be spaced not more than eight times the depth of the beams, and not more than eight feet.

PAR. 5.—Where beams or channels are used in pairs they shall be connected with steel or iron separators near each end and at each concentrated load and not more than five feet apart elsewhere, and beams twelve inches or more in depth, if connected by bolted separators, shall have two bolts for each separator.

PAR. 6.—*Steel Columns.*—Steel column ends shall either be machine faced and brought into actual contact or full riveted connections shall be provided to develop the strength of columns. Latticing and tie plates shall be provided in accordance with good engineering practice.

PAR. 7.—*Plate Girders.*—In proportioning the flanges of plate girders one eighth of the web may be considered as available in each flange. When the top flange is not stayed laterally at distances of twenty times its breadth

Sect. 16, Par. 7.]

the stresses shall be reduced as required in section fourteen. Stiffeners, properly fitted at ends, shall be provided over supports and under concentrated loads with sufficient area in the outstanding legs to transmit the stresses in bearing at twenty thousand pounds per square inch, and with sufficient rivets to transmit the stresses to the web. Intermediate stiffeners shall be so spaced that the clear distance between the stiffeners, or the clear distance between flange angles, shall not exceed that given by formula

$$d = \frac{t}{40}(12,000 - s)$$

where  $d$  is the clear distance between stiffeners or flange angles

$t$  is the thickness of web

$s$  is the shear per square inch.

PAR. 8.—*Trusses*.—Trusses shall be designed so that the stresses in each member can be calculated with reasonable accuracy by statical methods. The centre of gravity lines of members meeting at a joint shall, if possible, intersect at a point. Eccentricity due to a non-fulfillment of this rule shall be allowed for in the computations. The centre of gravity of a group of rivets connecting one member to another shall, in general, lie as nearly as practicable in the centre of gravity line of the member. Trusses shall be properly braced.

PAR. 9.—*Riveting*.—In skeleton construction, all splices in columns, all connections of girders or beams to columns, and all connections subject to a reversal of stress shall be made by means of rivets. In all types of construction, splices in girders and chords of trusses and connections carrying heavy stresses shall be riveted. Minor connections such as floor stringers to girders, carrying moderate stresses, may be either riveted or bolted.

[1918, c. 179, sect. 6, Special Act.]

## SECTION 17.

## CLASSIFICATION.

*First and Second Class Buildings.*

PAR. 1.—Every building hereafter erected more than seventy-five feet in height, or hereafter increased in height to more than seventy-five feet, shall be a first class building. Every second class building hereafter erected more than four stories in height, and any second class building now in existence and increased in height to more than four stories shall have the first floor and the basement and cellar stories of first class construction except as hereinafter otherwise mentioned for buildings for habitation. Every building for habitation hereafter erected covering more than five thousand square feet, or more than five stories in height, shall be a first class building. Every building altered or enlarged and occupied or to be occupied as a habitation, to be in excess of sixty-five feet in height, or in excess of five thousand square feet in superficial area, or in excess of five stories in height, shall be a first class building. Every building hereafter erected within the building limits to be occupied as a permanent schoolhouse shall be a first class building. Every building hereafter erected as a theatre, and every building hereafter altered to be occupied as a theatre, shall be a first class building. Every building hereafter erected for, altered to or converted to use as a moving picture house shall be a first class building. All other buildings may be of second or third class construction.

PAR. 2.—Except as is otherwise provided herein, buildings adapted for habitations, and not more than five stories in height, may be erected, remodelled or enlarged of second class construction, but no such building shall exceed five thousand square feet in superficial area or sixty-five feet in height. Every such building exceeding



Sect. 17, Par. 2.]

thirty-five hundred square feet of superficial area, and every such building exceeding seventeen hundred and fifty square feet in superficial area, and more than four stories or fifty-five feet in height, shall have the first floor and basement and cellar stories of first class construction, with no openings through the first floor, except for piping; provided that stairways from the first story to the outside may penetrate the floor construction. Said stairs herein referred to are to be fireproof, separated from the basement or cellar by walls of solid masonry at least eight inches thick, with no opening to cellar or basement. The first story, or basement, or both the first story and basement, in such building more than seventeen hundred and fifty square feet in superficial area so constructed, remodelled or enlarged, may be used for mercantile purposes; provided that the floors and walls separating the portion of the building used for mercantile purposes and the portion used for habitation be of first class construction with no openings, except for piping, but that stairways from the portion used for habitation to the outside may penetrate the mercantile portion. In such event, the stairs herein referred to are to be constructed of incombustible material and separated from the latter by solid masonry walls at least eight inches thick with no opening to the portion used for habitation. In such buildings where the second floor is of first class construction the requirement providing for the first floor, basement and cellar stories to be of first class construction may be omitted.

[1921, c. 289, sect. 2.]

#### RESTRICTION OF AREAS.

PAR. 3.—Any first class building used above the first floor as a warehouse or store for the storage or sale of merchandise shall have all *vertical openings protected*



Sect. 17, Par. 3.1

*by fireproof enclosures.* Such enclosures shall, if enclosing stairs or escalators, have automatic doors, and all glass in the enclosure shall be wire glass.

PAR. 4.—Such a building shall be so divided by brick walls built like party walls with the same openings allowed, that no space inside the buildings shall exceed in area *ten thousand square feet*, except that when any such building has a frontage of not less than *fifty feet on each of two streets*, such space may exceed *ten thousand square feet* in area, *provided* that buildings in which such extension of area beyond ten thousand square feet is permitted shall have *automatic fire sprinklers installed* and means of ingress and egress satisfactory to the commissioner and the board of appeal.

PAR. 5.—Second class buildings used above the first floor as warehouses or stores for the storage or sale of merchandise shall *be so divided by brick walls*, built like *party walls* with the same openings allowed, that no space inside such buildings shall exceed in area *ten thousand square feet*, and *no existing wall* in any second class building shall be removed so as to leave an *area of more than ten thousand square feet*, nor shall any existing wall separating areas which combined would exceed ten thousand square feet in area, have openings cut in it greater in area or number than is allowed in this act for party walls.

PAR. 6.—Every second class building more than *three* stories high and used above the first floor as a warehouse or store for the storage or sale of merchandise, shall have all vertical openings for elevators and stairways, air or light shafts, through its floors protected by fireproof enclosures. Such enclosures shall be supported by fireproof supports and framing, and shall, if enclosing stairs or escalators, have automatic doors, and all glass in the enclosure shall be wire glass.

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PAR. 7.—No building used above the first floor for the storage or sale of merchandise shall have less than two means of egress from every story, one of which means may be either an outside fire escape or through a brick wall closed by automatic doors into a building of the same class; except that an independent monumental stairway extending from the basement to the second floor may be constructed.

#### BUILDINGS FOR MANUFACTURING PURPOSES.

PAR. 8.—Buildings *outside* the building limits and adapted exclusively for manufacturing, storage, mechanical or *stable* purposes, may be built under such conditions as the commissioner shall prescribe. If of wood such buildings shall not exceed forty-five feet in height.

[1914, c. 782, sect. 4.]

[1916, c. 248, Special Act.]

[1918, c. 179, sect. 7, Special Act.]

[1921, c. 289, sect. 2.]

### SECTION 18.

#### CONSTRUCTION.

##### *Height.*

PAR. 1.—No building, structure or part thereof shall be of a height exceeding two and one half times the width of the widest street on which the building or structure stands, whether such street is a public street or place or a private way, *nor exceeding one hundred and twenty-five feet* in any case. The width of such street, place or private way shall be measured from the face of the building or structure to the line of the street on the other side. If the street is of uneven width, the width shall be the average width of the part of the street opposite the building or structure; if the effective width of the street is increased by an area or setback, the space between the

Sect. 18, Par. 1.]

face of the main building and the lawfully established line of the street may be built upon to the height of two and one half times the width of the street.

PAR. 2.— All buildings or structures hereafter erected in any part of the city shall be subject to the restrictions imposed by chapter 452 of the acts of the year 1898, by chapter 543 of the acts of the year 1902, by chapter 383 of the acts of the year 1905, and by chapter 416 of the acts of the year 1907, so far as the restrictions imposed by said acts relate to the districts described therein; and shall also be subject to any restrictions lawfully imposed by the park commissioners of said city.

## SECTION 19.

### EXCAVATIONS.

PAR. 1.— All excavations shall so be protected, by sheet piling if necessary, by the persons causing the same to be made, that the adjoining soil shall not cave in by reason of its own weight. It shall be the duty of the owner of every building to furnish, or cause to be furnished, such support that his building shall not be endangered by any excavation; *provided*, that the owner of any building which is endangered by an excavation carried by an adjoining owner more than ten feet below the grade of the street may recover the expense so caused of supporting such building from the persons causing such excavation to be made. All permanent excavations shall be protected by retaining walls. In case of any failure to comply with the provisions of this section the commissioner may enter upon the premises and may furnish such support as the circumstances may require. Any expense so incurred may be recovered by the city from the persons required by law to furnish the support.

## SECTION 20.

## FOUNDATIONS OF BUILDINGS.

PAR. 1.— The foundation loads of every building, except temporary structure, shall be carried down to a satisfactory bearing material by means of properly designed walls, piers, grillages or piling which shall be so designed, located or otherwise disposed as to permit the entire loads which they transmit to be distributed over the bearing area with a unit intensity which shall not exceed the allowable value given in this section. The bearing area of any pile is the area over which it distributes its load.

PAR. 2.— The footing of every foundation shall be carried down at least four feet below any adjoining surface exposed to freezing and no footing shall be started on soil which is in a frozen condition. Foundations shall not be laid in freezing weather unless adequate precautions are taken against frost action.

PAR. 3.— For the purposes of this section "satisfactory bearing material" shall mean only ledge rock in its natural bed, natural deposits of sand, gravel or clay, and any combination of the foregoing materials which does not contain or does not overlie an appreciable amount of organic material.

PAR. 4.— In the absence of satisfactory tests of their sustaining power, the maximum allowable bearing values of the above materials shall be limited by the following unit pressures:—

	Tons per Square Foot.
Solid ledge rock . . . . .	100
Shale and hardpan . . . . .	10
Gravel, compact sand and hard yellow clay . . .	6
Dry or wet sand of coarse or medum sized grains, hard blue clay mixed or unmixed with sand, dis- integrated ledge rock . . . . .	5



Sect. 20, Par. 4.]

Ton per  
Square Foot.

Medium stiff or plastic clay mixed or unmixed with	
sand, or fine grained dry sand . . . . .	4
Fine grained wet sand (confined) . . . . .	3
Soft clay protected against lateral displacement . . . . .	2

PAR. 5.—*Definitions*.—(a) Solid ledge: Naturally formed rock, such as the granites and others of similar hardness and soundness, normally requiring blasting for their removal.

PAR. 6.—(b) Shale: Laminated slate or clay rocks removable with more or less difficulty by picking.

PAR. 7.—(c) Hardpan: A thoroughly cemented mixture of sand and pebbles or of sand, pebbles and clay, with or without a mixture of boulders and difficult to remove by picking.

PAR. 8.—(d) Gravel: A natural uncemented mixture of coarse or medium grained sand with a substantial amount of pebbles measuring one fourth of an inch or more in diameter.

PAR. 9.—(e) Sand (compact): Requiring picking for its removal.

PAR. 10.—(f) Sand (loose): Requiring shovelling only.

PAR. 11.—(g) Sand (medium grain): Individual grains readily distinguishable by eye though not of pronounced size.

PAR. 12.—(h) Sand (fine grained): Individual grains distinguished by eye only with difficulty.

PAR. 13.—(i) Hard clay: Requiring picking for its removal.

PAR. 14.—(j) Disintegrated ledge rock: Residual deposits of decomposed ledge.

PAR. 15.—(k) Medium clay: Stiff and plastic but capable of being spaded.

PAR. 16.—(l) Soft clay: Putty-like in consistency and changing shape readily under relatively slight pressure.



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PAR. 17.—*Note.*—The materials described in items *c, d, e, f, g, i, j, k*, shall be in relatively thick beds, if full loading value is used. Otherwise, if underlaid by a softer material, the value assigned to that material shall be used.

*When a Building Rests on a Ledge.*

PAR. 18. Wherever a building or structure is to rest in part only upon solid ledge, the unit intensity of load upon the balance of the bearing area shall be not more than one half of the value given above for the several classes of soil.

PAR. 19.—Prior to the issuance of a permit for any permanent building or structure, the owner shall, by means of open pits or by test borings carried at least ten feet into a satisfactory bearing material other than ledge rock, determine the character and depth of the soil underlying the proposed site, and a certified copy of the reports of all borings and tests pit so taken, together with samples, taken dry, of the material selected for a foundation bearing shall be filed with the commissioner for his approval and classification. The number and location of borings taken, together with the method used in making and reporting them shall be as directed by the commissioner.

PAR. 20.—Foundations for first and second class buildings may be of brick, stone or concrete. The thickness shall be as stated in section twenty-three with the further provision that all foundation walls below grade shall be figured as retaining walls when they act as such.

PAR. 21.—Foundations of stone shall be of square split stone except that rubble stone shall be allowed under buildings outside of the building limits as they existed prior to September twenty-third, nineteen hundred and thirteen, but only when such buildings do not exceed forty-five feet in height and the foundation wall is less than ten feet in depth. No rubble foundation shall be

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less than twenty inches in thickness. All walls shall be properly bonded by through courses.

PAR. 22.—*Footings*.— The footings of foundation walls or piers shall consist of footing stones, concrete, reinforced concrete construction or steel grillages. Footings of wood construction may be used *provided* that they are to be entirely below the permanent ground water level.

PAR. 23.—*Footing Stones*.— Footing stones shall be at least ten inches in thickness. They shall be fully bedded upon the bearing soil.

PAR. 24.—*Concrete Footings*.— Concrete footings shall be not less than twelve inches in thickness. They may be either stepped or battered to meet the wall or pier which they support. The offset of each step or the angle of batter shall be such as not to exceed the allowable stresses in the concrete. If battered footings are used there shall be a square shoulder at the base which shall be not less than four inches in height.

### *Steel Grillage.*

PAR. 25.— Steel grillage foundations shall have at least six inches of concrete below and shall be entirely embedded in and surrounded by concrete at least four inches thick between steel and earth, and the concrete shall be no poorer than one part Portland cement and seven and one half parts aggregate, measured before mixing.

PAR. 26.—*Footing Loads*.— Provision shall be made in determining the required area of footings for safely supporting the full dead loads and the figured live loads on the lowest tier of columns, piers or walls, plus the weight of the footings themselves and such backfilling and overlying basement floor loads as may come vertically over the projecting spread of the footing.

PAR. 27.—*Foundation Piers and Caissons*.— The foundation of any building or structure may be carried down to ledge or other satisfactory bearing material by isolated

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piers of approved masonry or by open or pneumatic caissons, so designed that the working stresses in the materials and on the soil do not exceed those established by this act.

[1918, c. 179, sect. 8, Special Act.]

[1920, c. 91, sect. 2.]

## SECTION 21.

### PILE FOUNDATIONS.

PAR. 1.—*General Requirements.*—The supporting value of piles shall be obtained from embedment in or bearing on material as firm as can practicably be obtained, and the method of driving shall be such as not to impair their strength. The frictional value observed in driving for that part of piles embedded in or passing through such materials as peat, silt, or fill overlying such material, shall not be relied upon for support. No pile or group of piles shall be loaded eccentrically, except in cases where it is impracticable to avoid it. In such cases the unit stress allowable for piles shall not be exceeded. Any type of pile construction not provided for in this section shall meet such requirements as may be prescribed by the commissioner.

PAR. 2.—A detached column or pier footing supported by piling shall rest upon not less than three piles, but column or pier footings supported by proper and permanent masonry or steel construction which provides lateral support in all directions may each rest upon a single pile if the allowable load per pile is not exceeded. Light wall foundations may be supported by a single row of piles: *provided*, that the length of wall unsupported laterally by proper masonry or steel construction does not exceed ten feet. All other foundation walls requiring piling shall rest upon at least two rows of piles, the rows to be at least two feet on centres for buildings up to thirty feet in height. For buildings exceeding thirty feet in height, if not more than

Sect. 21, Par. 2.]

two rows of piles are used, the rows shall be spread not less than three feet on centres.

PAR. 2A.—Piles under masonry buildings shall be capped with concrete or with block granite. If capped with plain concrete the proportion shall be one part Portland cement to not more than seven and one half parts aggregate, and the capping shall be not less than sixteen inches high above the pile heads. All concrete capping shall fill the space between and around them for a depth of six inches and shall extend for not less than six inches beyond the outer edge of the pile cluster. No rubble concrete shall be used for pile capping. If capped with block granite, each block shall have a firm bearing on not less than three piles, shall be not less than twelve inches thick, and shall project sufficiently to cover fully all pile heads.

PAR. 3.—Piles supporting steel or wooden buildings without masonry walls or floors may be capped with timber not less than six inches thick, securely joined together and to the piles.

PAR. 4.—The commissioner shall require additional piles to be driven for all piles which are broken, broomed or injured in any way, and for piles having a lower sustaining power than that required for the work.

PAR. 5.—The sustaining power of piles driven by jetting shall be determined by test loads as directed by the commissioner.

PAR. 6.—*Wooden Piles.*—Wooden piles shall be single sticks except as prescribed elsewhere, cut from sound live trees, shall be close grained and solid, free from defects, such as injurious ring shakes, unsound or loose knots, or decay, which may materially impair their strength or durability. Piles must be butt-cut above the ground swell and have a uniform taper from butt to tip.

PAR. 7.—*Short Bends not Allowed.*—A line drawn from the centre of the butt to the centre of the tip shall be within the body of the pile.



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PAR. 8.— All knots shall be trimmed close to the body of the pile. All piles shall be at least six inches in average diameter at tip under the bark.

PAR. 9.— *Inspection of All Piles.*— The commissioner shall require a competent inspector qualified by experience and training and satisfactory to him, to be on the work at all times while piles are being driven, and the inspector shall keep an accurate record of the length, size of tip and butt of each pile, the weight and fall of the hammer and the penetration of each pile for each of the last three blows.

PAR. 10.— Square timber of approved quality may be used as piling, in which case the average cross-section shall be not less than ten inches by ten inches, and the tip not less than six inches by six inches.

PAR. 11.— Pile heads shall be cut to sound wood before capping is placed.

PAR. 12.— *Loads on Wooden Piles.*— Wooden piles driven through fill, silt, peat or other soil incapable of adequately resisting lateral bending, to hardpan or ledge, or deriving their value from embedments of less than one twelfth their length in approved soil, shall be figured as columns, using the table for timber compression members, and using an area equal to the middle cross-section of the pile. All such piles shall be of hard wood such as oak, southern yellow pine or similar woods, if the commissioner shall so decide.

PAR. 13.— The safe load on all other wooden piles driven by drop hammer shall not exceed twelve tons each for spruce, Norway pine or other soft woods, nor fifteen tons each for southern yellow pine, oak or woods of similar strength, and shall be limited by the following formula:—

$$L = \frac{2 WH}{P \text{ plus } 1}$$



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PAR. 14.— When testing for their value the pile head shall have sound wood and the fall of the hammer shall be ten feet.

PAR. 15.— The safe supporting value of wooden piles when driven by single acting power hammer shall be limited by the following formula:—

$$L = \frac{2 WH}{P \text{ plus } 0.1}$$

PAR. 16.— In these formulas:—

L is the allowable load in pounds.

W is the weight of the hammer or striking parts in pounds.

H is the fall of the hammer in feet.

P is the average penetration in inches under the last three blows after the pile has been driven to a point where successive blows produce approximately equal or uniformly decreasing penetration.

PAR. 17.— The distance between wooden piles shall be not less than twenty-four inches on centres. The tops of all wooden piles shall be cut at an elevation not higher than grade 5.00, except that the commissioner may in his discretion permit a higher point of cut off, but not exceeding grade 9.00 in localities where the level of the ground water fluctuates with the tidal variations.

PAR. 18.— Wooden piles may be driven to a depth not exceeding ten feet below the ground surface by means of properly designed followers: *provided*, that such followers are constructed of steel or iron, and are equipped with a suitable cast iron or steel socket which encases the pile head sufficiently to avoid injury to them during the driving process. Before using such a follower the pile head shall be cut or trimmed so as to expose a sound section of timber on which the follower shall rest. If wooden driving blocks are inserted between the follower and pile hammer they

Sect. 21, Par. 18.]

shall be not more than twelve inches in height, of hard wood, and shall be replaced as often as their fibers become ruptured. In case followers are used, the sustaining value of the pile as determined by the driving formula shall be reduced twenty-five per cent unless test loads are applied, in which case the commissioner may allow a higher unit loading not exceeding the maximum prescribed by this section.

#### CONCRETE PILES.

PAR. 19.—*Pre-cast Concrete Piles.*—Pre-cast concrete piles shall be properly designed and reinforced to permit handling and driving without injury. The amount of longitudinal reinforcing employed shall be not less than two per cent nor more than four per cent, with bands or hoops not less than one fourth of an inch in diameter and spaced not further than ten inches. They shall be thoroughly cured before driving. The diameter or lateral dimension of such a pile shall be not less than eight inches at the point, and shall average not less than eleven inches. The length shall not exceed thirty times the average diameter when the pile is driven through fill, silt, peat or other material having relatively little lateral stiffness, to ledge or hardpan, or when it derives its value from embedment of less than one twelfth its length in approved soil, nor forty times the average diameter in any case.

PAR. 20.—When driven to ledge or hardpan the allowable load on any such pile shall not exceed four hundred pounds per square inch on the concrete at the average cross section, and six thousand pounds per square inch on the longitudinal reinforcement.

PAR. 21.—All pre-cast concrete piles shall be protected against damage in driving by the use of a suitable cushion cap of approved design, and when driven to ledge shall be provided with a metal shoe having ample bearing surface.

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PAR. 22.— *Cast in Place Concrete Piles.*— Concrete piles cast in place shall be so made and placed as to insure the exclusion of any foreign matter, and to secure a perfect full sized shape, and shall be spaced at least three feet, centre to centre, and more if the commissioner so decides. The average diameter of any such pile in place shall be not less than eleven inches, and the diameter of the tip shall be not less than eight inches. The length shall not exceed thirty times the average diameter when the pile is driven through fill, silt, peat or other material having relatively little lateral stiffness, to ledge or hardpan, or when it derives its value from embedment of less than one twelfth its length in approved soil, nor forty times the average diameter in any case. When driven to ledge or hardpan the allowable load on any such pile shall not exceed four hundred pounds per square inch on the concrete at the average section.

PAR. 23.— *General Provisions.*— Metal tubes five sixteenths of an inch thick or less, remaining in the ground, shall not be considered as reinforcement. To be considered as reinforcement, all steel rods shall be embedded in and covered by three inches of concrete.

PAR. 24.— The safe load for all concrete piles not driven to ledge shall be determined by the commissioner, who may, if he deems it necessary, require one or more tests of the same to be made at the expense of the owner of the proposed building or structure, or of the party causing the piles to be driven, but the commissioner shall not allow a greater load than one half of the test load giving three eighths inch total settlement, such total settlement to remain constant for a period of twenty-four hours, nor shall the prescribed unit stresses be exceeded. Such tests shall be made under the supervision of the commissioner, and the results shall be filed in his office. No concrete pile shall be allowed a greater load than thirty tons in any case.

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PAR. 25.—All load tests shall be conducted in accordance with regulations promulgated by the commissioner and to his satisfaction (but in the absence of such regulations all load tests shall be in accordance with regulations formulated by the commissioner, and to his satisfaction),\* but in the absence of such regulations, they shall be continued until at least twice the working load allowed has been put upon the pile, and an accurate record shall be kept, to the nearest one sixteenth inch of settlement for and after each increment of load has been added. Increments of load shall not exceed ten thousand pounds each, and at least eight hours shall elapse between the addition of successive increments. Test loads shall be applied at capping grade.

PAR. 26. —All concrete for concrete piles shall be mixed in the proportion of one part Portland cement to not more than six parts of aggregate, and with a sufficient amount of water to produce a plastic or viscous consistency.

PAR. 27.— Concrete piles shall be capped with concrete masonry only.

[1918, c. 179, sect. 9, Special Act.]

## SECTION 22.

### CELLARS — RAT-PROOFING.

PAR. 1.— *Cellars.*— The cellar of every building, where the grade or nature of the ground so requires, shall be sufficiently protected from water and damp by a bed at least two inches thick over the whole, of concrete, cement and gravel, tar and gravel, or asphalt, or by bricks laid in cement. No cellar or basement floor of any building shall be constructed below the grade of twelve feet above mean low water, unless such cellar is made waterproof. All metal foundations and

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\* Words in parentheses above should be stricken out, being a repetition.



Sect. 22, Par. 1.]

all structural metal work underground shall be protected from dampness by concrete, waterproofed where necessary, or by other material approved by the commissioner.

PAR. 2.—*Rat-proofing*.—The cellar of every building hereafter erected within the building limits shall be made rat-proof by the use of masonry or metal. All openings in foundations, cellars and basements in such buildings, except for doors and hatchways, and except also for such windows wholly above ground as may be exempted by the commissioner in his discretion, shall be completely covered with screens of metal having meshes of not more than one half of an inch in least dimension and constructed of rods or wire of not less than twenty gauge.

[1918, c. 179, sect. 10, Special Act.]

## SECTION 23.

### THICKNESS OF WALLS.

#### *Basement Wall.*

PAR. 1.—For the purposes of this section a basement wall shall be construed to include any exterior wall between the ground and the first floor, and any party, fire and bearing walls from the top of foundations to the first floor.

PAR. 2.—The thickness of masonry walls shall be in all cases, irrespective of the requirements of this section, sufficient to help the stresses in the masonry within the working stresses prescribed by this act.

#### *Single Family Dwellings.*

PAR. 3.—For single family dwellings not over three stories high with wooden floor beams spanning not more than fifteen feet, all exterior, party, bearing or fire walls

Sect. 23, Par. 3.]

shall be not less than twelve inches thick for basement walls and eight inches thick above the basement: *provided, however*, that the ends of floor timbers on opposite sides of a wall in such buildings shall not be nearer than eight inches to each other.

*Dwellings Not More Than Three Stories and Twenty Feet Wide.*

PAR. 4.—For dwellings not over three stories high with floors spanning not more than twenty feet, all exterior walls shall be not less than twelve inches thick for basement walls and eight inches thick above the basement, and all party, fire, and bearing walls shall be not less than twelve inches thick. In case any part of such a building is adapted for any use other than habitation all walls surrounding that part of the building shall be not less than twelve inches thick.

*All Other Dwellings, etc.*

PAR. 5.—For all other residences and for hotels, lodging houses, boarding houses, clubs, convents, hospitals, asylums and detention buildings, all exterior, party, fire and bearing walls above foundations shall have the following minimum thickness in inches:

STORIES.	Base- ment.	1.	2.	3.	4.	5.	6.	7.	8.
1 story building.....	12	12							
2 story building.....	12	12	12						
3 story building.....	12	12	12	12					
4 story building.....	12	12	12	12	12				
5 story building.....	16	12	12	12	12	12			
6 story building.....	16	16	12	12	12	12	12		
7 story building.....	16	16	16	12	12	12	12	12	
8 story building.....	20	16	16	16	12	12	12	12	12

*Other Than Dwellings.*

PAR. 6.—For all other buildings, exterior, party, fire and bearing walls above foundations shall have the following minimum thickness in inches:

STORIES.	Base- ment.	1.	2.	3.	4.	5.	6.	7.	8.
1 story building.....	12	12 <sup>1</sup>							
2 story building.....	12	12	12						
3 story building.....	16	12	12	12					
4 story building.....	16	16	12	12	12				
5 story building.....	16	16	16	12	12	12			
6 story building.....	20	16	16	16	12	12	12		
7 story building.....	20	20	16	16	16	12	12	12	
8 story building.....	20	20	20	16	16	16	12	12	12

<sup>1</sup> In case the floor area is less than 500 square feet, the wall thickness may be 8 inches.

PAR. 7.—*Provided, however,* that if any part of any building is lower than the rest, the lower part may have walls of thicknesses required for a building of height equal to that of the lower part.

*Foundation Walls.*

PAR. 8.—The foundation walls shall be at least four inches thicker than the required thickness of the walls of the first story. The thickness herein given shall apply to all masonry walls unless they are reinforced by a frame or skeleton of steel or reinforced concrete.

*Mezzanine Floor or Balcony.*

PAR. 9.—For the purposes of this section any balcony or mezzanine floor of more than ten feet span shall be considered as forming a story in fixing the thickness of the walls which support it.

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*Ashlar.*

PAR. 10.— In reckoning the thickness of walls, ashlar shall not be considered unless the walls are at least sixteen inches thick and the ashlar is at least eight inches thick, or unless alternate courses are at least four and eight inches to allow bonding with the backing. Ashlar shall be held by metal clamps to the backing or be properly bonded to the same.

*Non-bearing Walls — Thickness.*

PAR. 11.— Non-bearing walls not used for fire or party walls may be four inches less in thickness than is required by the preceding tables; and such walls supporting stairs or stair landings may be eight inches less: *provided, however*, that no such non-bearing or stair wall shall be less than eight inches thick nor have a greater height unstayed laterally than thirty times its thickness, except with the approval of the commissioner.

*Curtain Walls.*

PAR. 12.— Curtain walls between columns, buttresses or projecting piers may be thinner than is required by the preceding tables: *provided, however*, that in single family houses not over three stories high such curtain walls shall be not less than four inches thick, and in all other buildings such curtain walls shall be not less than twelve inches thick for fire or party walls nor less than eight inches thick for exterior walls, except that the parts between the top of one window opening and the bottom of the window opening above, if faced with metal, shall be backed by at least four inches of incombustible material. No curtain wall exceeding twenty feet in length shall have a greater height unstayed laterally than thirty times its thickness.



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*Hollow Block Walls.*

PAR. 13.—Hollow block walls shall have the same minimum thickness as is required for brick walls, but shall not be used for bearing walls in buildings over four stories high. Solid unreinforced concrete walls shall have the same minimum thickness as required for brick walls. Reinforced concrete walls shall be of the thickness and construction required by the commissioner, subject to the requirements of section fifteen.

[1918, Special Acts, c. 179, sect. 11.]

## SECTION 24.

## ANCHORS.

PAR. 1.—All walls of a first or second class building meeting at an angle shall be securely bonded, or shall be united every five feet of their height by anchors made of at least two inches by half an inch of steel or wrought iron, well painted, and securely built into the side or partition walls not less than thirty-six inches, and into the front and rear walls at least one half the thickness of such walls.

## SECTION 25.

## BRICKWORK — BONDING.

PAR. 1.—Every eighth course, at least, of a brick wall shall be a full heading or bonding course, except where walls are faced with face brick, in which case in every eighth course at least every other brick shall be a full header. No diagonal header ties shall be used.

PAR. 2.—In a skeleton frame building brick facing of not more than four inches in thickness may be bonded to the frame by metal ties if other suitable precautions satisfactory to the commissioner are taken. Such ties shall be of galvanized wire or other suitable material satisfactory to him.

[1918, Special Acts, c. 179, sect. 12.]

## SECTION 26.

## VAULTED WALLS.

PAR. 1.— If the air spaces are headed over and the walls are built solid for at least three courses below the floor and roof beams, walls, if of brick, may be built hollow. They shall contain, exclusive of withes, the same amount of material as is required for solid walls, and the masonry on the inside of the air space in walls over two stories in height shall be not less than eight inches thick, and the parts on either side shall be securely tied together with ties not more than two feet apart in each direction.

## SECTION 27.

## WALLS FRAMED WITH IRON OR STEEL.

PAR. 1.— Walls may be built in part of iron or steel or with a reinforced concrete or metal framework. In such metal framework the beams and girders shall be riveted to each other at their respective junction points. If columns made of rolled iron or steel are used, their different parts shall be riveted to each other, and the beams and girders resting upon them shall, if possible, have riveted connections to unite them with the columns. If cast iron columns are used, each successive column shall be bolted to the one below it by at least four bolts not less than three fourths of an inch in diameter, and the beams and girders shall be bolted to the columns. At each line of floor or roof beams, lateral connections between the ends of the beams and girders shall be made in such manner as rigidly to connect the beams and girders with each other in the direction of their length.

## SKELETON PARTY WALLS.

PAR. 2.— All party walls of skeleton construction shall have curtain walls of brick, not less than twelve inches thick.

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PAR. 3.— All outside walls of skeleton construction shall have curtain walls which may be of masonry, terra-cotta, concrete, or reinforced concrete, constructed and supported under such conditions as the commissioner shall prescribe.

PAR. 4.— If the metal or other framework is so designed that the enclosing walls do not carry the weight of floors or roof, then the walls shall be of masonry or concrete construction and shall be thoroughly anchored to the iron skeleton, and whenever the weight of such walls rests upon beams or columns, such beams or columns shall be made strong enough in each story to carry the weight of wall resting upon them without reliance upon the walls below them.

## SECTION 28.

### PARTY WALLS ABOVE ROOF.

PAR. 1.— In buildings less than forty-five feet in height all party walls shall be built to a height at least twelve inches above the roof covering, and shall be capped with stone, cement or metal securely fastened to the masonry. In all other buildings such walls shall be carried thirty inches above the roof.

## SECTION 29.

### WALLS — CORNICES.

PAR. 1.— Where a wall is finished with a stone cornice, the greatest weight of material of such cornice shall be on the inside of the face of the wall. All cornices of second class buildings shall be of brick or covered with fireproof material, and the walls shall be carried up to the boarding of the roof; and where the cornice projects above the roof the masonry shall be carried up to the top of the cornice and covered with metal, like parapet walls.

## SECTION 30.

## PIERS AND HEARTHES.

PAR. 1.— Piers and walls shall have caps or plates, where they are needed, sufficient properly to distribute the load.

PAR. 2.— Hearths shall be supported by trimmer arches of brick or stone; or shall be of single stones at least six inches thick, built into the chimney and supported by iron beams, one end of which shall be securely built into the masonry of a chimney or of an adjoining wall, or which shall otherwise rest upon an incombustible support. Brick jambs of every fireplace, range or grate opening shall be at least eight inches wide each, and the backs of such openings shall be at least eight inches thick. Hearths and trimmer arches shall be at least twelve inches longer on either side than the width of such openings, and at least eighteen inches wide in front of the chimney breast. Brickwork over fireplaces and grate openings shall be supported by proper iron bars, or brick or stone arches.

## SECTION 31.

## WALLS — DOORWAYS IN PARTY WALLS.

PAR. 1.— Openings for doorways in party walls shall not exceed one hundred square feet each in area, and each opening shall have two sets of fire doors separated by the thickness of the wall, hung in a manner satisfactory to the commissioner, except that the aggregate width of all openings in any story shall not exceed fifty per cent of the length of the wall in which such openings occur. Openings, not exceeding one hundred and forty-four square inches, constructed and protected as shall be approved by a writing signed by the fire commissioner, and filed with the commissioner, may be permitted in any wall or floor.



## SECTION 32.

## FIRE PROTECTION.

PAR. 1.— All structural metal supporting or forming part of the frame, floors, roof or columns of any building, except as otherwise exempted in this act, shall be protected against the effect of heat.

Protection shall consist of:—

PAR. 2.— (a) *Concrete*.— Cast in forms around and in direct contact with the structural members and reinforced with iron or clamps or hangers or with wires in such a manner as to form a thorough bond. Concrete filling may be deemed protection for the upper flanges where arch construction is used;

PAR. 3.— (b) *Terra Cotta*.— Clamped in place with steel clamps or wrapped securely with number twelve galvanized iron wire or metal lath in such manner as to hold each block in place, set in mortar no poorer than one part natural cement and two parts sand and (except where arches abut) plastered with the same mortar at least one half inch thick, and at least thick enough to make the entire protection as thick as required in paragraph three. Terra cotta blocks may be hollow but each face shall be solid, and no shell or web shall be less than three quarter inches thick;

PAR. 4.— (c) *Brickwork*.— Set in cement mortar;

PAR. 5.— (d) Any material or form of construction that will resist the action of flames and a heat of seventeen hundred degrees Fahrenheit for at least two hours without raising the temperature of the material to be protected above five hundred and fifty degrees Fahrenheit, through a thickness of two inches, as determined by fire and water tests for fireproofing construction adopted by the American Society for Testing Materials.

PAR. 6.— This protection shall be, unless it is otherwise

Sect. 32, Par. 6.]

provided herein, at least three quarter inches thick and at least of the thickness named in the following table:—

On columns carrying masonry walls:—

One and one half inches against the edges of flanges;  
Four inches elsewhere.

On columns carrying floors or roofs or both:—

One and one half inches against the edges of flanges;  
Three inches elsewhere.

On beams, girders or trusses carrying masonry walls:—

One inch on top;  
Two inches elsewhere.

On beams, girders, or trusses carrying floors or roofs or both:—

One inch on top;  
One and one half inches elsewhere.

On beams deeper than fifteen inches or having a flange width of more than seven and one half inches:—

One inch on top;  
Two inches elsewhere.

On lugs, brackets, braces and similar minor construction members and beyond the tips of rivets:—

Three quarters of an inch.

#### *Exterior Isolated Columns.*

PAR. 7.—About isolated columns on the exterior of buildings, the thickness of protection may be reduced to one inch, when the same is covered with an outer shell of cast iron or steel.

#### *Plaster on Metal Lath Not Fire Protection for Steel or Iron.*

PAR. 8.—Plaster on metal lath shall not be considered as a fire protection for steel or iron structural members, except that where suspended ceilings of metal lath and plaster leave not less than one inch of air space against the

Sect. 32, Par. 8.]

protective covering of such structural member, the protective covering may be one inch in thickness.

PAR. 9.—Metal lath and plaster used for the requirements of this section shall have a total thickness, not counting clinches, of not less than three quarters of an inch.

*Pipes, etc., Not to be Embedded.*

PAR. 10.—No pipes, wires, cables or other material shall be embedded in the required fireproofing of columns or other structural members.

The above requirements as to fire protection shall not apply in the following cases:—

PAR. 11.—(a) Structural metal in second or third class buildings in any case in which wood without fire protection would be permissible under this act.

PAR. 12.—(b) Structural metal which faces on enclosed spaces that are strutted up or hung down from floors or roofs where the tops, bottoms and walls or partitions of such spaces are protected against fire on the outer side, as required elsewhere in this act.

PAR. 13.—(c) Lintel angles under stone or brick unless over ten feet span.

PAR. 14.—(d) Buildings built in whole or in part of a better class of construction than is required by this act shall be required to have only such protection for structural metal as would be required in a building of the type that would be allowed in the given case.

PAR. 15.—(e) Metal work in a non-bearing partition, and for furrings and metal used only to support finish or equipment, and for metal of stair construction, suspension rods for balconies, steel work of theatre stages, fly galleries and rigging lofts.

PAR. 16.—(f) Metal, other than columns, carrying no other loads than ceilings, or suspended balconies not over

Sect. 32, Par. 16.]

eight feet wide. When a suspended ceiling is used it shall be of metal lath and plaster with hanging rods, ties, stiffening, and the like, of metal.

*Alterations — Fireproofing to be Satisfactory to Commissioner.*

PAR. 17.—In work in connection with alterations of existing buildings, the character and amount of protection for steel and iron work shall be made satisfactory to the commissioner.

PAR. 18.—Whenever any protective material or structural metal is, in the opinion of the commissioner, liable to injury by trucks or merchandise, wood or metal guards shall be applied as he may require.

*Firestopping — Third Class Buildings.*

PAR. 19.—In buildings of third class construction the exterior walls at each floor level, and all spaces between joists over girders and bearing partitions, and from plate to roof boarding, shall be firestopped with masonry or metal.

*Firestopping in Second Class Buildings.*

PAR. 20.—In buildings of second class construction spaces between strap furring on brick walls shall be filled for a distance of five inches below and five inches above the floor beams with mortar, and all spaces between joists over girders and bearing partitions, and from plate to roof boarding shall be firestopped with masonry not less than four inches thick.

*Roof, Stairway and Chimney Firestopping.*

PAR. 21.—In buildings of second or third class construction spaces between rafters, over furring enclosing spaces under the roof, shall be firestopped with wood or metal, and spaces between stringers of stairs and joists of



Sect. 32, Par. 21.]

landings, unless stairs are unceiled or of incombustible materials, shall be firestopped with masonry or metal or not less than seven eighths of an inch of wood, at least twice in each flight of stairs. All spaces around chimneys shall be thoroughly firestopped with sheet metal, metal lath and plaster, or masonry.

*Firestopping — How Applied.*

PAR. 22.— Firestopping shall completely fill all openings where it is applied; all chases or enclosures for pipes shall be firestopped adjacent to other required firestopping and by the same materials, except that metal lath and plaster may be used.

*Rat-proofing.*

PAR. 23.— No building operations shall be permitted which will create unnecessary permanent spaces where rats will find refuge from their enemies and breed.

*Firestopping Floors.*

PAR. 24.— In every building of second or third class construction each floor shall be thoroughly stopped by a continuous layer of asbestos fabric, magnesocalcite or other fire-resisting material approved by the commissioner.

PAR. 25.— *Furnaces and Smoke Pipes.*— The tops of all heating furnaces and smoke pipes shall be at least one foot below the nearest wooden beams or ceilings. All ceilings immediately over a furnace or boiler, and for six feet on each side thereof, and all ceilings over indirect radiators shall, except under fireproof floors, be metal-lathed and plastered.

PAR. 26.— *Register Boxes.*— All hot-air register boxes in the floors or partitions of buildings shall be set in soapstone or equally fireproof borders and not less than two inches in width, shall be made of tin plate, and shall have double pipes and boxes properly fitted to the soapstone. Hot-air

Sect. 32, Par. 26.]

pipes and register boxes shall be at least one inch from any woodwork, and register boxes shall be fifteen inches by twenty-five inches or larger, and their connecting pipes shall be two inches from any woodwork. If indirect hot water or indirect steam heat is used, the commissioner may modify or dispense with the foregoing requirements.

PAR. 27.— *Vent and Smoke Pipes*.— All vent or smoke pipes for stoves, furnaces or heaters, not including gas stoves, hereafter installed shall be placed not nearer than twelve inches to any lath, plaster or board partition, ceiling or woodwork. Where such pipes pass through a lath and plaster or board partition, they shall be protected by ventilated metal collars at least six inches larger in diameter than the pipe. Where such pipes enter the chimney, the opening into the same shall be protected by a metal collar built at least four inches into the brickwork of the chimney. No such pipe shall pass through the roof or exterior wall of any building. Such pipes when within eighteen inches of a ceiling shall be protected by having the ceiling over them, and at least two feet wide, wire-lathed and plastered, or by having a shield of metal of the same width hung from the floor timbers, and at least six inches distant therefrom. Vent pipes to gas stoves, if placed nearer than three inches to any woodwork or lath and plaster partition, shall be protected with incombustible material.

[1918, c. 179, sect. 13, Special Act.]

[1921, c. 60, sect. 2.]

## SECTION 33.

### FIREPROOF PARTITIONS.

Except as is otherwise provided in this section, partitions in buildings of first class construction shall be constructed of the materials and in the manner herein specified:—

PAR. 1.— (a) Brick in cement mortar;

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PAR. 2.—(b) Concrete, consisting of one part Portland cement and not more than three parts of sand and six parts of stone or gravel, not less than three inches thick if properly reinforced with steel, nor less than four inches thick otherwise;

PAR. 3.—(c) Cinder concrete, consisting of one part Portland cement and not more than three parts of sand and six parts of cinders, not less than four inches thick if properly reinforced with steel, nor less than five inches thick otherwise;

PAR. 4.—(d) Hollow terra cotta blocks, laid in cement mortar, not less than three inches thick;

PAR. 5.—(e) Hollow concrete blocks, of either stone or cinder concrete laid in cement mortar, not less than three inches thick;

PAR. 6.—(f) Solid or hollow blocks consisting of gypsum containing not more than twenty-five per cent by weight of cinders, asbestos fiber, wood chips or vegetable fiber, laid in gypsum plaster or cement mortar tempered with lime, not less than three inches thick;

PAR. 7.—(g) Metal lath on a steel studding covered with Portland cement mortar or gypsum plaster, of a finished thickness of not less than two inches in the case of solid partitions, nor less than three inches in the case of hollow partitions; or

PAR. 8.—(h) Any material or form of construction that may be approved by the commissioner if conforming to the requirements of the fire test hereinafter prescribed. But nothing in this section shall prevent the erection, in the discretion of the commissioner, of partitions of pressed metal and glass or of temporary partitions of wood and glass within rooms or spaces enclosed by fireproof partitions or walls.

PAR. 9.—The thicknesses as above described are for partitions up to fifteen feet in height, and they shall be increased in thickness one inch for every additional eight

Sect. 33, Par. 9.]

feet or fraction thereof. If partitions are not plastered on both sides, the thicknesses shall be one inch greater than those above specified.

*Fireproof Partition Support.*

PAR. 10.—*Construction.*—Unless built as approved masonry walls, partitions in fireproof buildings shall be independently supported at each floor. They shall be keyed, or otherwise securely fastened to the ceilings, and, when necessary, shall be stiffened with suitable steel uprights securely fastened to floor and ceiling. Partitions enclosing hallways or toilet rooms and other permanent partitions shall not rest on wood flooring but shall start on the fireproof construction of the floor. In the upper story, where there is a space between the ceiling of the top floor and the roof, partitions need not extend above the ceiling.

PAR. 11.—*Tests of Fireproof Partitions.*—In testing the fireproof qualities of any partition construction, a vertical panel not less than fourteen feet long and nine feet high shall be subjected to a continuous fire for not less than one hour ; an average temperature of seventeen hundred degrees Fahrenheit, during the latter half hour, followed by an application for not less than two and one half minutes of a hose stream from a one and one eighth inch nozzle at thirty pounds nozzle pressure, without the passage of flame during the test.

[1918, c. 179, sect. 14, Special Act.]

SECTION 34.

TIMBERS IN WALLS OF SECOND CLASS BUILDINGS.

PAR. 1.—The ends of all wooden floor or roof timbers in second class buildings shall enter the wall to a depth of at least four inches; and the ends of all such beams shall be so shaped or arranged that in case of fire they may fall without injury to the wall.

[1918, c. 179, sect. 15, Special Act.]



## SECTION 35.

## ALTERATION OF EXISTING BUILDINGS.

PAR. 1.— Any building, except those of third class construction within the building limits, having not more than five floors above the mean grade of all the sidewalks, and covering an area of not more than seventeen hundred and fifty square feet, may be altered, remodeled or enlarged for use as a house for habitation or tenements using second class construction.

[1921, c. 289, sect. 3.]

PAR. 2.— The first story or basement, or both the first story and basement, in such buildings may be used for mercantile purposes; provided that the walls surrounding the mercantile portion are firestopped with brick, terra cotta or gypsum tile laid in cement filled in solidly to full height between the studs, and the latter covered on both sides with metal lath and cement plaster, the soffits of stairs and the ceilings of the mercantile portion to be covered with three coat work cement plaster on metal lath.

[1921, c. 289, sect. 3.]

## HEIGHT ALLOWED.

PAR. 3.— The height of any such building shall not be increased unless the walls and foundations conform to the provisions of this act. The number of stories of such a building shall not exceed five above the cellar or basement.

## EGRESS REQUIRED.

PAR. 4.— Every such building, except a single family dwelling, more than three stories in height so altered, remodeled or enlarged, shall be provided with at least two independent means of egress, at least one of which shall consist of an inside stairway, enclosed with partitions of wood studding, the spaces between the studs filled solid to full height with bricks, terra cotta or gypsum blocks, laid

Sect. 35, Par. 4.]

in mortar, and both sides of partitions and soffits of stairs plastered with three coats of cement plaster on metal lath, or any enclosure of superior fire-resisting construction, satisfactory to the commissioner, all openings into said enclosure to have self-closing fireproof doors and fireproof frames. The other means of egress may be outside iron fire escape with stairs to the ground, or connecting iron balconies to an adjoining building, and each tenement above the first story shall have direct access to at least two separate means of egress.

#### EXPOSURE REQUIRED.

PAR. 5.—Every such building, so altered, remodelled or enlarged, shall have, in addition to the exposure on the widest street, an exposure as long as the average width of the building, upon a space open from the ground to the sky, at least ten feet wide for the first three stories, and increasing in width five feet for the next two stories. If the proposed building is more than five stories in height, said space shall be twenty feet: *provided*, that if the basement and first story are adapted or enlarged for use for mercantile purposes, the exposure required by this section shall not apply to that part of the building; and *provided*, also, that sufficient space be retained on the lot for the storage of ashes or garbage.

PAR. 6.—Such exposure may be either upon private or public ways, or upon land which is dedicated for the use of the building, and may be divided and placed as approved by the building commissioner.

PAR. 7.—These spaces shall remain undiminished so long as the building is used for habitation.

PAR. 8.—If the building is situated on the corner of streets or private ways not less than ten feet wide the commissioner may approve the omission of the whole or part of this additional exposure.

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ALTERATION — WHEN IT PRODUCES NEW STRUCTURE  
PRACTICALLY.

PAR. 9.— If in the opinion of the commissioner the alteration proposed to be made in a building is of such extent as, when done, to produce a practically new structure or to impair the stability or increase the fire risk of the structure as a whole, then the whole structure shall be made to conform to the provisions of this act for a new structure of the same class. A building damaged by fire or other casualty may be repaired or restored so as to conform to its original condition, or may be reconstructed in some or all of its parts, so as to conform to the requirements of this act for new buildings, as the commissioner may specify in his permit.

## WINDOWS IN LIVING ROOM.

PAR. 10.— Every living room in a building adapted for habitation shall have a window on the open air of an area not less than ten square feet and distant in a three story building not less than six feet from any opposite wall; distant in a four story building not less than eight feet from any opposite wall; distant in a five story building not less than ten feet from any opposite wall. This shall not apply to the construction of third class buildings, except the provision for a window on the open air of an area.

## EXPOSURE REQUIRED.

PAR. 11.— New buildings for habitation or tenement purposes of not more than seventeen hundred and fifty square feet area, may be built of second class construction with the same restrictions as required by the preceding paragraphs of this section referring to the alteration, remodelling and enlarging of second class buildings. The ex-

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posure required under this section shall apply to all other buildings hereafter constructed and adapted for habitation.

## SECTION 36.

## LOADS.

PAR. 1.—Dead loads shall consist of the weight of walls, floors, roofs, and permanent partitions. The weights of various materials shall be assumed as follows:

	Pounds per Cubic Foot.
Beech . . . . .	42
Birch . . . . .	42
Brickwork . . . . .	120
Concrete, cinder, structural . . . . .	108
Concrete, cinder, floor filling . . . . .	96
Concrete, stone . . . . .	144
Douglas, fir . . . . .	36
Granite . . . . .	168
Granolithic surface . . . . .	144
Limestone . . . . .	150
Maple . . . . .	42
Marble . . . . .	168
Oak . . . . .	48
Pine, southern yellow . . . . .	42
Sandstone . . . . .	144
Spruce . . . . .	30
Terra cotta, architectural, voids unfilled . . . . .	72
Terra cotta, architectural, voids filled . . . . .	120

	Pounds per Square Foot.
Gravel or slag and felt roofing . . . . .	6
Plastering on metal lath, exclusive of furring . . . . .	8

[1921, c. 289, sect. 3.]



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## LIVE LOADS.

PAR. 2.—Live loads shall include all loads except dead loads. Every permit shall state the purpose for which the building is to be used, and all floors and stairs shall be of sufficient strength to bear safely the weight to be imposed thereon in addition to the dead load, but shall safely support a minimum uniformly distributed live load per square foot as specified in the following table:

CLASS OF BUILDING.	Pounds per Square Foot.
Armories, assembly halls, and gymnasiums.....	100
Fire houses:—	
Apparatus floors.....	150
Residence and stable floors.....	50
Garages, private, not more than two cars.....	75
Garages, public.....	150
Grandstands.....	100
Hotels, lodging houses, boarding houses, clubs, convents, hospitals, asylums and detention buildings:—	
Public portions.....	100
Residence portions.....	50
Manufacturing, heavy.....	250
Manufacturing, light.....	125
Office buildings:—	
First floor.....	125
All other floors.....	75
Public buildings:—	
Public portions.....	100
Office portions.....	75
Residence buildings, including porches.....	50
Schools and colleges:—	
Assembly halls.....	100
Class rooms never to be used as assembly halls.....	50
Sidewalks.....	250
(Or eight thousand pounds concentrated, whichever gives the larger moment or shear.)	
Stables, public or mercantile:—	
Street entrance floors.....	150
Feed room.....	150
Carriage room.....	50
Stall room.....	50
Stairs, corridors, and fire escapes from armories, assembly halls and gymnasiums.....	100
Stairs, corridors, and fire escapes except from armories, assembly halls, and gymnasiums.....	75
Storage, heavy.....	250
Storage, light.....	125
Stores, retail.....	125
Stores, wholesale.....	250

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PAR. 3.— The commissioner may require design for heavier loads than the above minimum values if, in his judgment, the purpose of the building or vibrating machinery requires it. For buildings or structures not included in the above table, the commissioner shall establish allowable live loads.

*Allowable — Maximum Loads Imposed.*

PAR. 4.— The commissioner may prescribe the maximum loads which may be imposed upon the floors of existing buildings.

*Change of Occupation — Permit Required.*

PAR. 5.— No use or occupation of a building or part of building for a purpose other than that for which it is designed to be used, as set forth in the permit upon which it was erected, and no change in the use or occupation of a building or part thereof which will increase the floor load beyond the capacity prescribed for such use and occupation shall be made unless, upon application therefor, the commissioner shall issue a permit on condition that the proposed use will not endanger the safety of the building or the health or the safety of the occupants thereof.

*Floor Loads to be Posted.*

PAR. 6.— Before any building hereafter erected is occupied, in whole or in part, as a business building, and before any building already erected but not previously occupied as a business building, is occupied or used, in whole or in part, for that purpose, and whenever, for any reason, the commissioner shall prescribe the load for an existing building or part thereof, the safe live load for each floor, or portion of each floor as approved by the commissioner, shall be marked on metal plates, of character

Sect. 36, Par. 6.]

approved by him, which shall be supplied and securely affixed by the owner of the building in a conspicuous place in the story to which they relate. It shall be the duty of the occupants of the building to maintain such plates during their occupancy, and the owner of the building or his agent shall cause the same to be properly affixed with each change of occupancy. No person shall place or cause or permit to be placed on any floor of any building any greater load than the approved safe load.

*Slab, Arch and Beam to Have Sufficient Strength to Bear Live and Dead Load.*

PAR. 7.— Every plank, slab and arch, and every floor beam carrying one hundred square feet of floor or less, shall be of sufficient strength to bear safely the combined dead and live load supported by it, but the floor live loads may be reduced for other parts of the structure as follows:

*Live Load Reductions.*

PAR. 8.— In all buildings except armories, garages, gymnasiums, storage buildings, wholesale stores, and assembly halls, for all flat slabs of over one hundred square feet area, reinforced in two or more directions and for all floor beams, girders, or trusses carrying over one hundred square feet of floor, ten per cent reduction.

PAR. 9.— For the same, but carrying over two hundred square feet of floor, fifteen per cent reduction.

PAR. 10.— For the same, but carrying over three hundred square feet of floor, twenty-five per cent reduction.

PAR. 11.— These reductions shall not be made if the member carries more than one floor and therefore has its live load reduced according to the table below.

PAR. 12.— In public garages, for all flat slabs of over three hundred square feet area reinforced in more than one direction, and for all floor beams, girders and trusses

Sect. 36, Par. 12.]

carrying over three hundred square feet of floor, and for all columns, walls, piers, and foundations, twenty-five per cent reduction.

PAR. 13.— In all buildings except storage buildings, wholesale stores, and public garages, for all columns, girders, trusses, walls, piers, and foundations.

Carrying one floor, . . . No reduction.

Carrying two floors, . . . Twenty-five per cent reduction.

Carrying three floors, . . . Forty per cent reduction.

Carrying four floors, . . . Fifty per cent reduction.

Carrying five floors, . . . Fifty-five per cent reduction.

Carrying six floors or more, . . . Sixty per cent reduction.

#### *Roof Loads.*

PAR. 14.— Roofs shall be designed to support safely minimum live loads as follows:—

PAR. 15.— Roofs with pitch of four inches or less per foot, a vertical load of forty pounds per square foot of horizontal projection applied either to half or to the whole of the roof.

PAR. 16.— Roofs with pitch of more than four inches and not more than eight inches per foot, a vertical load of fifteen pounds per square foot of horizontal projection and a wind load of ten pounds per square foot of surface acting at right angles to one slope, these two loads being assumed to act either together or separately.

PAR. 17.— Roofs with pitch of more than eight inches and not more than twelve inches per foot, a vertical load of ten pounds per square foot of horizontal projection and a wind load of fifteen pounds per square foot of surface acting at right angles to one slope, these two loads being assumed to act either together or separately.

PAR. 18.— Roofs with pitch of more than twelve inches



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per foot, a vertical load of five pounds per square foot of horizontal projection and a wind load of twenty pounds per square foot of surface acting at right angles to one slope, these two loads being assumed to act either together or separately.

PAR. 19.— All buildings and structures shall be calculated to resist a pressure per square foot on any vertical surface as follows:—

For forty feet in height, . . . . .	Ten pounds.
Portions from forty to eighty feet above ground, . . . . .	Fifteen pounds.
Portions more than eighty feet above ground, . . . . .	Twenty pounds.

#### *Wind Pressure.*

PAR. 20.— But the commissioner may require a building or structure to be designed for larger pressure than the pressures given in the table, if, in his judgment, the exposure requires it.

PAR. 21.— If the resisting moments of the materials of construction are not sufficient to resist the moment of distortion due to wind pressure without exceeding the stresses allowed in this act, additional bracing shall be introduced to supply the deficiency in the moment.

[1918, c. 179, sect. 16, Special Act.]

[1914, c. 595.]

## SECTION 37.

### SHUTTERS.

PAR. 1.— In all first or second class mercantile or manufacturing buildings over thirty feet in height, outside openings in party walls, or in any rear or side wall within twenty feet of an opposite wall or building, shall have metal frames and sashes and shall be glazed with

Sect. 37, Par. 1.]

wire glass or shall be protected by shutters. Such shutters shall be covered on both sides with tin or shall be made of other substantial fireproof material, and hung on the outside, either upon independent metal frames or upon metal hinges attached to the masonry, and shall be made to be handled from the outside, and one such shutter in each room shall have a protected hand-hole eight inches in diameter.

## SECTION 38.

### ELEVATORS.

#### *Shafts.*

PAR. 1.—Elevators and hoists for freight which do not run above the first story may be constructed without fireproof enclosures. Freight and passenger elevators may be placed in areas or hallways where the same are continuous and unbroken, such elevators to be protected by metal grille. Except as above provided, all shafts for elevators, hoists, dumb-waiters, lifts and shafts used for lighting and ventilating or other air ducts shall be constructed of incombustible materials; provided that in second and third class buildings not over four stories high, the shafts may be constructed of wood, terra cotta or gypsum blocks laid in mortar and plastered on both sides with at least three coats of cement plaster on metal lath. The bottom of all shafts shall be fire protected. All windows, or ceiling lights opening into such shafts shall have metal or metal covered fireproof frames and sash glazed with wire glass and arranged to close automatically in case of fire. Such shafts shall be carried at least three feet above the adjoining roof and there covered with a skylight, providing opening of a total area equal to the area of the shaft and glazed with hammered or ribbed glass, protected by wire screens on metal supports.

[1921, c. 289, sect. 4.]

Sect. 38.]

*Gates, Rails, Trap Doors.*

PAR. 2.— Every opening into a shaft or hoistway shall be protected by self-closing gates, rails, trap-doors, or other equivalent devices.

*Safety Device.*

PAR. 3.— Every elevator shall be provided with a safety attachment to prevent the falling of the car. The machinery over the elevator shall have underneath it a grille sufficient to protect the car from falling material.

PAR. 4.— Every opening into an elevator shaft or hoistway and every opening through a floor, other than a stairway, shall be closed when not in use.

*Outside Windows on Shafts.*

PAR. 5.— All elevator shaft openings, other than openings into passenger elevator shafts, shall be furnished with metal covered or incombustible doors, hung in a manner satisfactory to the commissioner, and shall be provided with iron thresholds. Wire glass panels may be used in such doors. Outside windows or openings of every elevator shaft shall have three vertical iron rods, painted red, equally spaced off in such window or opening.

*Danger Signal.*

PAR. 6.— Freight elevators shall be equipped with a suitable danger signal to warn people of the approach of the elevator.

PAR. 7.— The space between the car and door of each landing shall be not more than two inches.

PAR. 8.— No elevator shall be used in any building until the same is approved in writing by the commissioner.

*Prohibition of Use.*

PAR. 9.— In case any freight or passenger elevator is not constructed or furnished in compliance with this act,

Sect. 38, Par. 9.]

or has become unsafe, the commissioner shall post a conspicuous warning and prohibition at each entrance to such elevator. It shall thereafter, until a new written permit is given by the commissioner, be a penal offence hereunder to operate the said elevator, or to remove or deface the said notice.

*Recess in Wall Prohibited — Platforms — Outside Openings.*

PAR. 10.— Freight elevator wells hereafter built on the line of the external wall of a building shall be so constructed that there shall be no recess in the outer wall along the whole line of the same, and that no more than four inches space shall be allowed between the platform of the car and the outer wall. The side of the platform and the line of the door-way shall be flush with the well-way, and the door openings from the said elevator well into the building shall be placed at least six inches back from the face of the well, so as to allow space enough for self-closing gates to operate between the door and the well opening. Outside openings to freight elevators shall be protected by self-closing slatted gates, "vertical," with spaces not wider than two inches between the slats.

*Speed Limit.*

PAR. 11.— All elevators running at a speed of more than one hundred feet a minute, shall be operated by competent persons not less than eighteen years of age, and no other person shall operate or have the care or charge of such an elevator.

*Age of Operator.*

PAR. 12.— No elevator shall be operated by or placed in charge of any person under sixteen years of age.

*Plans and Permit Required.*

PAR. 13.— No elevator shall hereafter be installed in any building without a permit having been granted there-



Sect. 38, Par. 13.]

for, and the applicant shall submit a plan showing the proposed location of the shaftway, the area and situation of the machine room, and the said plan shall be filed as part of the records of the department. All elevators hereafter installed shall be located so as to give easy and safe access to all the principal parts of the machinery for inspection and repairs.

*Overspeed Governor.*

PAR. 14.—All passenger elevators hereafter built, operated by drum and cables, shall have an overspeed governor to prevent the car from descending at overspeed, and all passenger and freight elevators shall have a slack cable device to stop the machinery in case the car is held up or the cables part.

*Accident to be Reported.*

PAR. 15.—If any accident shall occur to any elevator affecting life or limb or damaging any part of the machinery or running parts of the elevator, it shall be the duty of the engineer or superintendent in charge immediately, before any repairs are made, or any broken pieces are removed, to notify the commissioner of the accident, before the elevator is operated again, so that the cause of the accident may be determined, any faulty construction remedied, and satisfactory repairs made.

PAR. 16.—All elevator cables hereafter installed that pass through bevelled sockets, the ends returning and refitting into the same, shall have in addition lead or babbitt metal poured into the ends of the socket, to prevent the possibility of the cable's slipping.

*Manufacturers to Test Safety Devices.*

PAR. 17.—All manufacturers of elevators shall be required to test, in the presence of an inspector, the safety

Sect. 38, Par. 17.]

devices of every elevator installed before the same is turned over to the owners for use, and the commissioner shall be notified by the manufacturer at least twenty-four hours before such test is made. An inspector may require a test of the safety device of any elevator if in his judgment the same is required.

*Additional Safeguards.*

PAR. 18.— The commissioner may require additional safeguards on elevators, if in his judgment the condition, use or surroundings of the elevator demand them.

PAR. 19.— The commissioner may, with the approval of the mayor, appoint competent elevator inspectors in addition to those already detailed, one for every one thousand elevators and hoistways in the city of Boston.

[See 1914, c. 782, sect. 6.]

SECTION 39.

WOODEN BUILDINGS.

PAR. 1.— *Foundations.*— Every wooden building hereafter erected or enlarged, outside of the building limits, shall have a foundation of rubble, block granite or brick or concrete, carried up to the surface of the ground, and no round or boulder stone shall be used. Every such foundation, if of brick or concrete, shall be at least twelve inches thick, and if of granite shall be at least eighteen inches thick, and if of rubble shall be at least twenty inches thick, and shall be laid at least four feet below any surface exposed to frost and upon the solid ground or upon piles properly spaced.

PAR. 2.— *Underpinning.*— Every such wooden building hereafter erected or enlarged, the sills of which do not rest directly upon a foundation as above described but on an underpinning, shall have such underpinning made of

**Sect. 39, Par. 2.]**

brick, stone or concrete, and the underpinning, if of brick or concrete, shall be at least twelve inches thick; and if of stone shall be at least sixteen inches thick.

PAR. 3.—*Framing.*—Every wooden building hereafter erected or enlarged shall have all its parts of sufficient strength for their purposes; shall be built with wall-girts not smaller than four by six spruce or fir, or four by four hard pine, or with ledger boards; shall have no studs more than twenty inches on centres for buildings more than one story high, with all angles between partitions, or between partitions and walls, blocked strongly, giving what is known as “solid corners”; shall have every post securely braced; shall have wall spaces back of all ledger boards tightly filled with at least two inch furring cut in between studs; and shall have all framing securely nailed or framed or ironed together.

**LEDGER BOARDS PROHIBITED.**

PAR. 4.—Where no exterior wall boarding is used ledger boards shall not be used, and wall-girts shall be framed to posts and pinned. Braces shall repeat in each story and shall not be smaller than three inch studding.

[1918, c. 179, sect. 17, Special Act. 1914, c. 782, sect. 7.]

**SECTION 40.****HABITATIONS — HEIGHT — DISTANCE FROM LOT LINE.**

PAR 1.—No wooden building hereafter erected, to be used as a habitation, shall be more than three stories nor more than forty feet in height above the first floor line; nor shall any part of such a building, eaves and cornices excepted, which is to be occupied by three or more families, be placed nearer than five feet from any adjoining lot lines, and if built on land of the same owner it shall not be nearer than ten feet from any other building; nor shall

## Sect. 40, Par. 1.]

any part of such wooden building, which is to be occupied by less than three families and is less than three stories in height, be nearer than five feet from the line of any adjoining lot; nor shall any lot line be moved nearer than five feet from any wooden building, or, if built on land of the same owner, nearer than ten feet from any other building, eaves and cornices excepted, unless in either case the wall on the side toward such lot or adjoining building is constructed as a brick or concrete wall not less than eight inches thick and carried twelve inches above the roof, all openings therein to be protected by wire glass set in metal frames and sash. Wooden buildings hereafter constructed to form a block of two or more houses shall have brick or concrete party walls between adjoining houses, which shall be not less than eight inches thick, shall be carried twelve inches above the roof and shall be capped with a metallic covering.

## AREA.

PAR. 2.— No wooden building hereafter erected to be used in whole or in part as a habitation shall exceed twenty-two hundred square feet in area, and no such existing building shall be enlarged to exceed twenty-two hundred square feet in area.

## OTHER THAN HABITATION.

PAR. 3.— No wooden building hereafter erected to be used for purposes other than habitation shall exceed forty feet in height above the first floor line, and no such building, except buildings erected for the purpose of storing ice, which shall not be erected within five hundred feet of any other building, shall exceed twenty-two hundred feet in area unless the external parts are covered with incombustible material approved by the commissioner, and no such building shall exceed five thousand square feet



Sect. 40, Par. 3.]

in area in any event: *provided, however*, that nothing in this section shall be construed to affect the provisions of section nine of this act; and no such existing building shall be altered or enlarged to exceed forty feet in height above the first floor line or twenty-two hundred square feet in area, unless the external parts of the whole building are covered with incombustible material approved by the commissioner, or to exceed five thousand square feet in area in any event.

PAR. 3A.—Wooden buildings erected for purposes other than habitation shall not be situated within five feet of the line of the lot unless the side wall on such line or lines be of brick or concrete, carried above the roof at least twelve inches and capped with a metallic covering. All openings in such outer walls shall be protected by wire glass set in metal frames and sash.

[1913, c. 704, sect. 2; 1914, c. 248, sect. 1; 1914, c. 782, sect. 8.]

## SECTION 41.

### FLOORING DURING CONSTRUCTION.

[General Laws, c. 143, Sects. 17, 18 and 19. See Appendix.]

## SECTION 42.

### ADDITIONAL REQUIREMENTS FOR TENEMENT HOUSES.

#### *Definitions.*

Certain words are defined as follows:—

PAR. 1.—(1.) A *tenement house* is any house, building, structure or portion thereof, occupied, or adapted for occupation, as a dwelling by more than three families living independently of one another and doing their cooking upon the premises, or by more than two families above the first story so living and cooking. A family living in a tenement house may consist of one or more persons.

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PAR. 2.—*An existing tenement house* is any building erected as such or converted to such use or as altered for such use or so used before the passage of this act, and any building adapted for such use, *provided* that a permit was issued for the erection of said building before the passage of this act.

PAR. 3.—*A tenement house hereafter erected* is any tenement house other than an existing tenement house as above defined.

PAR. 4.—(2.) *A corner lot* is a lot situated at the junction of two or more streets, or of two or more streets and alleys or open passageways not less than fifteen feet in width.

PAR. 5.—(3.) *A yard* is an open unoccupied space on the same lot with a building and between the extreme rear line of said building and the rear line of the lot.

PAR. 6.—(4.) *A court* is an open unoccupied space other than a yard on the same lot with a building. An inner court is a court not extending to a street, or alley, or open passageway, or yard. An outer court is a court extending to a street, or alley, or open passageway, or yard. A vent court is an inner court for the lighting and ventilation of water-closets, bathrooms, public halls, and stair halls only. An intake is a passageway connecting an inner court with a street, or alley, or open passageway, or yard.

PAR. 7.—(5.) *A shaft*, whether for air, light, elevator, dumbwaiter, or any other purpose, is an enclosed space within a building, extending to the roof, and covered either by a skylight or by the roof. A vent shaft is a shaft used solely to ventilate or light water-closet compartments or bathrooms or kitchenettes.

PAR. 8.—(6.) *A public hall* is a hall, corridor, or passageway not within an apartment.

PAR. 9.—(7.) *A stair hall* includes the stairs, stair

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landings, and those parts of the public hall through which it is necessary to pass in going from the entrance floor to the roof.

PAR. 10.—(8.) *An apartment* is a room, or suite of two or more rooms, occupied or suitable for occupation, as a residence for one family.

PAR. 11.—(9.) *Repairs* means any renewal of any existing part of a building, or of its fixtures or appurtenances, which does not lessen the strength of the building.

[1921, c. 289, Sect. 5.]

## SECTION 43.

### FIRE ESCAPES.

#### *Tenement Houses.*

PAR. 1.—Except as provided in section thirty-five, in all tenement houses hereafter erected of the first or second class more than three stories in height and in every building hereafter enlarged and occupied or to be occupied as a tenement house more than three stories in height, there shall be provided at least one of the following means of egress in addition to the staircases, but if the first named means of egress is provided no means of egress other than this and one other staircase need be provided, and every suite shall have direct access to both such means of egress.

[1921, c. 289, Sect. 6.]

PAR. 2.—(1.) *An enclosed stairway* consisting of iron or reinforced concrete stairs, and stair landings, each not less than three feet in width in the clear, surmounted by a pent house not less than eight feet high. The stairway shall extend from the roof to the level of the ground, and shall open into either a street or passageway leading to a street; the said stairway shall be lighted to the satisfaction of the building commissioner and enclosed in walls of brick, stone, terra-cotta or concrete, and said walls may be within or without the line of the main wall of

Sect. 43, Par. 2.]

the building, but access to said stairway shall be only by doors through an external wall to balconies leading to the same, except at the roof where access to said stairway may be directly from the roof.

PAR. 3.—(2.) *Iron balconies* connecting with adjoining buildings or with adjoining parts of the same house separated from each other by a brick, terra-cotta or concrete partition wall in which there are no openings except such as are protected with fireproof self-closing doors, and every suite above the first floor, shall have direct access to at least two means of egress, one of which shall be an enclosed stairway. The said balconies shall be not less than thirty inches wide and capable of sustaining a load of seventy pounds per square foot; railings shall be of iron, stone, terra-cotta or concrete, and three feet high, or higher if in the opinion of the commissioner a greater height is required for safety.

PAR. 4.—(3.) *Exterior fire escapes* of iron with iron grated floors, and capable of bearing a load of seventy pounds per square foot. The stair treads shall be of iron, and the pitch of the stairs shall not exceed sixty degrees.

PAR. 5.—*Balconies* shall be at least three feet four inches wide, and the stairs at least twenty inches wide. There shall be a landing at the foot of each flight, and at the level of the second floor there shall be cantilever ladders. The rails on all horizontal balconies and on the stairs shall be at least two feet ten inches high at all points.

[1914, c. 782, sect. 9.]

## SECTION 44.

### BULKHEADS AND SCUTTLES.

#### *Tenement Houses Hereafter Erected.*

PAR. 1.—Every tenement house of the first or second class hereafter erected shall have in the roof a fireproof bulkhead with a fireproof door to the same, and shall



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have fireproof stairs with a guide or hand rail leading to the roof, except that in such tenement houses which do not exceed sixty-five feet in height, such bulkheads may be of wood covered with metal on the outside and plastered on metal lathing on the inside; provided that the door shall be covered with metal on both sides.

#### EXISTING TENEMENT HOUSES.

PAR. 2.— Every other tenement house shall have in the roof a bulkhead or scuttle. No scuttle shall be less in size than two feet by three feet, and all scuttles shall be covered on the outside with metal, and shall be provided with stairs or stationary ladders leading thereto and easily accessible to all tenants of the building, and kept free from encumbrance, and all scuttles and ladders shall be kept so as to be ready for use at all times. No scuttle shall be situated in a closet or room, but all scuttles shall be in the ceiling of the public hall on the top floor, and access through the scuttle to the roof shall be direct and uninterrupted. Scuttles shall be hinged so as to readily open. Every bulkhead hereafter constructed in a tenement house shall be constructed as provided for tenement houses hereafter erected and shall have stairs with a guide or hand rail leading to the roof, and such stairs shall be kept free from encumbrance at all times. No lock shall be placed on any scuttle or bulkhead door, but either may be fastened on the inside by movable bolts or hooks. All key-locks on scuttles and on bulkhead doors shall be removed. No stairway leading to the roof in a tenement house shall be removed.

#### SECTION 45.

##### HOUSES FOR HABITATION — MAIN STAIRCASE.

PAR. 1.— Every house for habitation, except a single family dwelling, hereafter erected more than three stories

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in height or covering an area of more than thirty-five hundred square feet shall have a staircase, designated by the commissioner, of incombustible material extending from the entrance to the roof and with a pent house constructed of incombustible material. And the said staircase shall not extend below the entrance floor level, except as an exit to the outside and shall have no opening into basement or cellar and shall be enclosed in walls constructed of incombustible material. In addition to the above staircase, all such buildings shall have a staircase enclosed as described in section forty-seven. All door openings from all stair enclosures shall have metal or metal covered self-closing doors and metal or metal covered frames. Public halls therein shall be at least three feet wide in the clear and stairs shall be at least three feet wide between the wall and the stair rail.

[1921, c. 289, sect. 7.]

#### STAIRWAY ENTRANCES — RISERS — TREADS — WINDOWS.

PAR. 2.— Each stairway shall have an entrance on the entrance floor from a street or alley or open passageway or from an outer court, or from an inner court which connects directly with a street or alley or open passageway. All stairs shall be constructed with a rise of not more than eight inches, and with treads not less than nine inches wide and not less than three feet long in the clear. Where winders are used all treads at a point eighteen inches from the strings on the wall side shall be at least ten inches wide.

#### BALUSTERS. RAILS.

PAR. 3.— In every tenement house all stairways shall be provided with proper balusters and railings kept in good repair. No public hall or stairs in a tenement house shall be reduced in width so as to be less than the minimum width prescribed in this section.

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## TENEMENT HOUSE SPRINKLERS.

PAR. 4.—In all tenement houses of second and third class construction, hereafter erected, being more than three stories high and containing more than ten suites, the basements or cellars, kitchenettes, stairway enclosures and elevator, light ventilating and dumb-waiter shafts shall be provided with a system of automatic sprinklers approved as to situation, arrangement and efficiency by the building commissioner.

PAR. 4a. The building commissioner may require the basement or cellar of a tenement house of first class construction, more than three stories high and containing more than ten suites, where in his opinion a fire hazard exists, to be equipped with a system of automatic sprinklers approved by him as to situation, arrangement and efficiency.

PAR. 4b. Basements or cellars in existing tenement houses of second and third class construction, being more than three stories high and containing more than ten suites, shall be provided with a system of automatic sprinklers approved as to situation, arrangement and efficiency by the building commissioner.

PAR. 4c. The building commissioner may in his discretion also require that all doors leading from rear stairway enclosures on each floor of such tenement houses shall be suitably protected by fire proofing material.

PAR. 4d. In existing tenement houses of first, second and third class construction more than three stories high and containing more than ten suites, where the first floor is of first class construction and in any such tenement house in which any stairway, enclosure, elevator, light, ventilating or dumb-waiter shaft is fireproof, as defined in section thirty-three, as amended by section fourteen of chapter one hundred and seventy-nine of the Special Acts

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Note — Sect. 45, pars. 4, 5 and 6, operation of to be suspended if accepted by Mayor, until March 1, 1921. Chap. 645, acts of 1920, Mayor did not accept.



Sect. 45, Par. 4.]

of nineteen hundred and eighteen, the commissioner may waive the provisions of this section in respect to automatic sprinklers, except in cases, where, in his opinion, a fire hazard exists.

[1921, c. 476, sect. 1.]

#### HALLS AND STAIRS TO BE LIGHTED.

PAR. 5.—Public halls and stairs in all tenement houses now existing or hereafter erected more than three stories in height, and having more than eight suites, shall be provided with proper and sufficient light to be kept lighted during the night.

#### SHAFTS TO BE INCLOSED.

PAR. 6.—In every tenement house now or hereafter existing which is more than three stories high and has more than eight suites, all elevator, vent and dumb-waiter shafts and stairways shall be enclosed in the basement or cellar by masonry walls not less than eight inches thick, or by two-inch solid metal and plaster partitions, with fireproof self-closing doors.

[1914, c. 782, sect. 10; 1915 c. 352, sect. 4, Special Act.]

[1920, c. 440, sects. 1 and 2.]

### SECTION 46.

#### STAIR HALLS, CONSTRUCTION OF.

PAR. 1.—In tenement houses hereafter erected covering more than seventeen hundred and fifty square feet, but not more than thirty-five hundred square feet in superficial area, which do not exceed three stories above the cellar or basement, there shall be at least two stairways. The stairs may be made of wood, provided that the soffits are covered with metal lath and plastered with three coats of cement plaster and provided that such stairs are properly fire-stopped at top center and bottom of each

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See note on preceding page.



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flight with brick, terra cotta or gypsum block nogging. Public halls therein shall be at least three feet wide in the clear and stairs shall be at least three feet wide between the wall and the stair rail.

[1921, c. 289, sect. 8.]

## SECTION 47.

### STAIR HALLS, HOW INCLOSED.

PAR. 1.— In second and third class tenement houses hereafter erected and existing tenement houses hereafter altered, stair halls other than those required to be of first class construction may be enclosed with wooden stud partitions; provided that such partitions are filled in solid the full height between the studs with brick, terra cotta, gypsum blocks or other filling material approved by the commissioner, all to be laid in mortar and both sides of partition and soffit of stairs plastered with three coats of cement plaster on metal lathing. All openings in these partitions are to be protected as mentioned in section thirty-five of said chapter five hundred and fifty.

[1921, c. 289, sect. 9.]

## SECTION 48.

### ENTRANCE HALLS.

PAR. 1.— Every entrance hall in every tenement house hereafter erected shall be at least three feet six inches wide in the clear, from the entrance up to and including the stair inclosure, and beyond this point at least three feet wide in the clear, and shall comply with all the conditions of the preceding sections of this act as to the construction of stair halls, except that in a fireproof tenement house hereafter erected the entrance hall may be inclosed with terra-cotta blocks not less than four

Sect. 48, Par. 1.]

inches thick and angle-iron construction, instead of brick walls. If such entrance hall is the only entrance to more than one stairway, that portion of said hall between the entrance and the stairway shall be increased at least eighteen inches in width in every part for each additional stairway.

## SECTION 49.

### CELLAR CEILINGS.

PAR. 1.— In all tenement houses of the second or third class hereafter erected, except where the floor next above is first class construction, the cellar and basement ceiling shall be lathed with metal laths and plastered three coats of cement plaster.

[1921, c. 289, sect. 10.]

## SECTION 50.

### PARTITIONS, CONSTRUCTION OF.

PAR. 1.— In all tenement houses of the second or third class hereafter erected all stud partitions which rest directly over each other shall run through the wooden floor beams and rest upon the cap of the partition below, and shall have the studding filled in solid between the uprights to the depth of the floor beams with suitable materials. All such buildings having a superficial area of over thirty-five hundred square feet and all buildings more than seventeen hundred and fifty square feet in superficial area and more than four stories or fifty-five feet in height, shall have all stud partitions between suites fireproofed by filling in full height between studs with brick, terra cotta or gypsum blocks or other filling material approved by the commissioner and covering both sides of the separating partitions with metal laths and three coats of cement plaster.

[1921, c. 289, sect. 11.]

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## SECTION 51.

## WOODEN TENEMENT HOUSES.

PAR. 1.— Outside of the building limits, tenement houses not exceeding three stories in height above the basement, nor eighteen hundred square feet in area, may be erected of wood. No wooden tenement house shall be increased in height so as to exceed three stories above the basement or cellar.

## SECTION 52.

## SHAFTS.

PAR. 1.— All elevator or dumb waiter shafts hereafter constructed in any tenement house shall be fireproof throughout, with self-closing doors at all openings at each story. But nothing in this section shall be so construed as to require inclosures about elevators or dumb waiters in the well-hole of stairs where the stairs themselves are inclosed in walls of incombustible materials, and are entirely constructed of fireproof materials as hereinbefore provided. Every vent shaft hereafter constructed in any tenement house shall have an intake of at least the dimensions provided for vent courts in section sixty-one, and shall be of the same minimum dimensions; and the skylight covering such vent shaft shall be raised at all points at least one foot above the top of the walls of such vent shaft, and the space between the top of said walls and the skylight shall remain at all points open and unobstructed except for such supports essential to the stability of the skylight, as may be approved by the commissioner.

## SECTION 53.

## BAKERIES AND FAT BOILING.

PAR. 1.— No bakery and no place of business in which fat is boiled shall be maintained in any tenement house

Sect. 53, Par. 1.]

which is not fireproof throughout, unless the ceiling and side walls of said bakery or of the said place where fat boiling is done are made safe by fireproof materials around the same, and there shall be no openings either by door or window, dumb-waiter shafts or otherwise, between said bakery or said place where fat is boiled in any tenement house and the other parts of the building.

## SECTION 54.

### OTHER DANGEROUS BUSINESSES.

PAR. 1.— All transoms and windows opening into halls from any part of a tenement house where paint, oil, spirituous liquors or drugs are stored for the purpose of sale or otherwise shall be glazed with wire-glass, or they shall be removed and closed up as solidly as the rest of the wall. There shall be between any such hall and such part of said tenement house a fireproof self-closing door.

## SECTION 55.

### LIGHT AND VENTILATION.

#### *Yards.*

#### TENEMENT HOUSES HEREAFTER ERECTED.

PAR. 1.— The requirements for yards hereinafter provided shall be deemed sufficient for all tenement houses.

#### WIDTH OF YARD.

PAR. 2.— Except in those cases hereinafter provided for, there shall be, behind every tenement house hereafter erected, a yard extending across the entire width of the lot, and at every point open from the ground to the sky unobstructed, except by fire escapes or unenclosed outside stairs.



Sect. 55.]

## DEPTH OF YARD.

PAR. 3.— The depth of said yard shall be measured from the extreme rear wall of the house to the rear line of the lot, and at right angles to said line, except that where there is an alley or open passageway in the rear of the lot the depth of the yard may be measured to the middle of said alley or open passageway. On an irregular lot of several depths, where there is more than one rear line to the lot, such yard may extend across the entire width of the lot in sections, *provided* that each section of the yard is in every part and at every point of the minimum depth hereinafter prescribed. Where the side lines of a lot converge toward the rear, the depth of the yard shall be such as to give it an area equal to the greatest width of the yard multiplied by the depth hereinafter prescribed.

## CORNER LOTS.

PAR. 4.— Except on a corner lot, the depth of the yard behind every tenement house hereafter erected fifty feet in height or less shall be not less than *twelve* feet in every part. All yards without exception shall be increased in depth at least one foot for every additional ten feet of height of the building, or fraction thereof, above fifty feet.

PAR. 5.— Except as hereinafter otherwise provided, the depth of the yard behind every tenement house hereafter erected upon a corner lot shall not be less than *six* feet in every part. But where such corner lot is more than twenty-five feet in width, the depth of the yard for that portion in excess of twenty-five feet shall be not less than twelve feet in every part, and shall increase in depth as above provided.

## THROUGH LOTS.

PAR. 6.— Whenever a tenement house is hereafter erected upon a lot which runs through from street to street, or from

Sect. 55, Par. 6.]

a street to an alley or open passageway, and said lot is one hundred and fifty feet or more in depth, said yard space shall be left midway between the two streets, and shall extend across the entire width of the lot, and shall be not less than twenty-four feet in depth from wall to wall, and shall be increased in depth at least two feet for every additional ten feet in height of the building, or fraction thereof, above fifty feet.

#### YARDS NOT FRONTING ON STREET, ETC.

PAR. 7.—When a tenement house hereafter erected does not front upon a street, a public alley, or a passageway, not less than fifteen feet wide, the requirements in this section as to yards shall apply to the front of such tenement house as well as to the rear. Neither the yard behind one tenement house nor any part thereof shall be deemed to satisfy in whole or in part the requirement of a yard in front of another tenement house.

### SECTION 56.

#### CASES IN WHICH NO YARD SHALL BE REQUIRED.

##### *Tenement Houses Hereafter Erected.*

PAR. 1.—No yard shall be required behind a tenement house hereafter erected upon a lot which abuts at the rear upon a railroad right of way, a cemetery or a public park.

P R. 2.—No yard shall be required behind a tenement house hereafter erected upon a lot entirely surrounded by streets or by streets, alleys or open passageways, not less than fifteen feet in width, or by such streets, alleys, and passageways and a railroad right of way, a cemetery or a public park.

PAR. 3.—No yard shall be required behind a tenement house hereafter erected upon a lot less than one hundred and fifty feet deep and running through from street to

Sect. 56, Par. 3.]

street or from a street to an alley or open passageway not less than fifteen feet in width, or upon a corner lot adjoining a lot less than one hundred and fifty feet deep and running through from street to street, or from a street to such an alley or open passageway.

PAR. 4.— No yard shall be required behind a tenement house hereafter erected upon a corner lot adjoining a lot more than one hundred and fifty feet deep and running through from street to street or from a street to an alley or open passageway not less than fifteen feet in width; but if there be no yard, an outer court upon such corner lot shall extend from the street along the line of such adjoining lot to a point in line with the middle line of the block; the width of said court to be not less than the width of court prescribed in the ensuing paragraph.

PAR. 5.— No yard shall be required behind a tenement house hereafter erected upon a corner lot adjoining two or more lots any one of which bounds upon a single street, or alley, or open passageway, not less than fifteen feet in width; but if there be no yard an outer court upon such corner lot shall extend from the street, or from such alley or open passageway along a lot line either to the extreme rear of an adjoining lot or to the extreme rear of said corner lot; *provided*, that the width of said court measured from the lot line to the opposite wall of the building, for tenement houses fifty feet or less in height, shall be not less than six feet in every part, and for every additional ten feet of height of the tenement house shall be increased one foot throughout the whole length of said court.

## SECTION 57.

### COURTS.

*Tenement Houses Hereafter Erected—not to be Roofed Over.*

PAR. 1. No court of a tenement house hereafter erected shall be covered by a roof or skylight, but every

Sect. 57, Par. 1.]

such court shall be at every point open to the sky unobstructed. Except such courts as are provided for in section fifty-six, all courts, except for fire escapes, may start at the second tier of beams.

## SECTION 58.

### OUTER COURTS.

#### *Tenement Houses Hereafter Erected on Lot Line.*

PAR. 1.—The provisions of this section shall apply only to tenement houses hereafter erected. Where one side of an outer court is located on the lot line, the width of the said court, measured from the lot line to the opposite wall of the building, for tenement houses fifty feet or less in height shall not be less than six feet in every part and for every ten feet of increase or fraction thereof in height of such tenement houses, such width shall be increased one foot throughout the whole length of the court, and except where the court runs through from the yard to the street, said width shall never be less than one eighth of the length of the court.

#### *Between Wings or Ells.*

PAR. 2.—Where an outer court is located between wings or parts of the same building, or between different buildings on the same lot, the width of the court, measured from wall to wall, for tenement houses fifty feet or less in height shall be not less than twelve feet in every part, and for every ten feet of increase or fraction thereof in the height of the said building, such width shall be increased two feet throughout the whole length of the court. The depth of such courts shall never exceed four times their width.

#### *Windows Opening On.*

PAR. 3.—Wherever an outer court changes its initial horizontal direction, or wherever any part of such court



Sect. 58, Par. 3.]

extends in a direction so as not to receive direct light from the street or yard, or from an alley, or open passageway not less than fifteen feet in width, the length of that part of the court shall never exceed its width, such length to be measured from the point at which the change of direction begins. Wherever an outer court between parts of the same building is twelve feet or less in depth, its width may be one half its depth, provided that such width is never less than four feet in the clear. This exception shall also apply to every offset or recess in outer courts. And no window except windows of water-closet compartments, bathrooms, or halls shall open upon any offset or recess less than four feet in width.

## SECTION 59.

### INNER COURTS.

#### *Tenement Houses Hereafter Erected — Width — Area.*

PAR. 1.— The provisions of this section shall apply only to tenement houses hereafter erected. Where one side of an inner court is located on the lot line and the building does not exceed fifty feet in height, the least width of the court shall be not less than eight feet, and the area of the court shall be not less than one hundred and twenty-eight square feet. For every ten feet, or fraction thereof, of increase in the height of the building above fifty feet the minimum width of such inner courts shall be increased by one foot, and the area thereof shall never be less than twice the square of such minimum width. Where an inner court is not located on the lot line but is inclosed on all four sides, and the building does not exceed fifty feet in height, the least width of said court shall be not less than sixteen feet and the area not less than two hundred and fifty-six square feet. For every ten feet, or fraction thereof, of increase in the height of

Sect. 59, Par. 1.]

said building above fifty feet, the minimum width of such inner courts shall be increased by two feet, and the area of the court shall never be less than the square of such minimum dimension.

## SECTION 60.

### VENT COURTS.

#### *Area — Least Dimension.*

PAR. 1.— Inner courts used solely for the lighting and ventilation of water-closets, bath rooms, kitchenettes, public halls, or stair halls, or for interior fire escapes, may be constructed in any tenement house, and shall be not less than fifteen square feet in area, nor less than three feet in the least horizontal dimension for buildings fifty feet or less in height. For every increase of ten feet or fraction thereof in the height of such buildings, the least dimension shall be increased by one foot, and the area by not less than eight square feet. Vents for kitchenettes must be entirely separate from those used for water-closets and bath rooms.

[1921, c. 289, sect. 12.]

## SECTION 61.

### INTAKES.

PAR. 1.— Every inner court in a tenement house hereafter erected shall be provided with one or more horizontal intakes at the bottom. Such intakes in vent courts shall be not less than four square feet in area, so arranged as to be easily cleaned; in other inner courts they shall be not less than three feet wide and seven feet high, and there shall be at least two open grille doors, containing not less than fifteen square feet of unobstructed openings, one at the inner court and the other at the street or yard as the case may be.

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PAR. 2.— Nothing contained in the foregoing sections concerning outer and inner courts shall be construed as prohibiting windows in walls that cut off the angles of such courts, provided that the running length of the walls containing such windows does not exceed six feet.

## SECTION 62.

## BUILDINGS ON THE SAME LOT WITH TENEMENT HOUSES

PAR. 1.— No tenement house shall hereafter be enlarged or its lot so diminished, and no building of any kind shall be hereafter so placed upon the same lot with a tenement house, as to decrease the minimum depth of yards or the minimum size of courts or yards prescribed in this act for tenement houses hereafter erected.

## SECTION 63.

## ROOMS, LIGHTING AND VENTILATION OF.

PAR. 1.— In every tenement house hereafter erected there shall be in each room, except water-closet compartments and bath rooms, windows of a total area of at least one eighth the floor area of the room and not less than eleven square feet in area, opening directly on a street or public alley or open passageway not less than fifteen feet wide or upon a yard or court of the dimensions hereinbefore specified, or upon a railroad right of way, cemetery or public park; and such windows shall be located so as properly to light all parts of the room. The top of at least one window shall be not less than seven feet six inches above the floor, and the upper half of it shall be made so as to open the full width.

## ALCOVES.

PAR. 2.— Every alcove in every tenement house hereafter erected shall be provided with an opening into a

Sect. 63, Par. 2.]

room, such opening to be equal in area to eighty per cent of that side of the alcove in which the opening is located; and the alcove shall have at least one window of not less than fifteen square feet of glazed surface opening as provided in this section.

[1921, c. 289, sect. 13.]

## SECTION 64.

### ROOMS, SIZE OF.

PAR. 1.—In every tenement house hereafter erected all rooms, except water-closet compartments and bath rooms, shall be of the following minimum sizes: In each apartment there shall be at least one room containing not less than one hundred and twenty square feet of floor area and provided with a chimney flue and thimble, except where said room is furnished with heat from a central heating apparatus, and every other room shall contain at least seventy square feet of floor area. Each room shall be in every part not less than eight feet high from the finished floor to the finished ceiling; provided that only one half of an attic room need be eight feet high. No portion of a room in any such tenement house shall be partitioned off so as to form a room not conforming to the provisions of sections sixty-three and sixty-four, or so as to form an alcove not conforming to sections sixty-three and seventy.

[1921, c. 289, sect. 14.]

## SECTION 65.

### PUBLIC HALLS.

#### *Lighting of.*

PAR. 1.—Except as otherwise provided in section sixty-six, in every tenement house hereafter erected having a superficial area of more than seventeen hundred



Sect. 65, Par. 1.]

and fifty square feet, every public hall shall have at least one window opening directly upon a street, a public alley or open passageway not less than ten feet in width, a railroad right of way, a cemetery or a public park, or upon a yard or court or a vent court as provided in section sixty. Either such window shall be at the end of said hall, with the plane of the window substantially at right angles to the axis of the hall, or there shall be at least one window opening as above prescribed in every twenty feet in length or fraction thereof of the hall; but this provision for one window in every twenty feet of hallway shall not apply to that part of the entrance hall between the entrance and the first flight of stairs, provided that the entrance door contains not less than five square feet of glazed surface. At least one of the windows provided to light each public hall shall be at least two feet six inches wide and five feet high, measured between the stop beads.

#### SEPARATE HALL.

PAR. 2.— Any part of a hall which is shut off from any other part of said hall by a door or doors shall be deemed a separate hall within the meaning of this section.

[1921, c. 289, sect. 15.]

#### SECTION 66.

##### WINDOWS FOR STAIR HALLS, SIZE OF.

PAR. 1.— In every tenement house hereafter erected covering a superficial area of more than seventeen hundred and fifty square feet, the aggregate area of windows to light or ventilate stair halls on each floor shall be at least fifteen square feet: *provided, however*, that when there shall be, within the space enclosed by the stairway and its landings, from the second story upward, an open area for light and ventilation whose least horizontal dimension

Sect. 66, Par. 1.]

shall be equal to the width of the stairs, but in no case less than three feet, then the windows required in sections sixty-five and sixty-six may be omitted.

[1921, c. 289, sect. 16.]

#### SKYLIGHT OVER STAIR WELL.

PAR. 2.— There shall be in the roof, directly over each stair well, in all tenement houses hereafter erected, without windows as above provided, a ventilating skylight provided with ridge ventilators, having a minimum opening of forty square inches, or else such skylights shall be provided with fixed or movable louvres. The glazed roof of the skylight shall not be less than twenty square feet in area.

### SECTION 67.

#### PRIVACY.

##### *Water-closets.*

PAR. 1.— In every apartment of four or more rooms in a tenement house hereafter erected, at least one water-closet compartment shall be accessible without passing through any bedroom.

### SECTION 68.

#### BASEMENTS AND CELLARS IN TENEMENT HOUSES AND OTHER BUILDINGS.

##### *Living Rooms.*

PAR. 1.— In tenement houses hereafter erected no room in the basement or cellar shall be occupied for living purposes, unless all of the following conditions are complied with:—

##### *Height Of.*

PAR. 2.— (1.) Such room shall be at least eight and one half feet high in every part from the floor to the ceiling.

## Sect. 73, Par. 2.]

*Water-closets.*

PAR. 3.— (2.) There shall be appurtenant to such room the use of a separate water-closet, constructed and arranged as required by section sixty-nine.

*Window Openings.*

PAR. 4.— (3.) Such room shall have a window or windows opening upon the street, an alley or open passage-way not less than fifteen feet in width, a railroad right of way, cemetery or public park or upon a yard or court. The total area of windows in such room shall be at least one eighth of the floor area of the room, and one half of the sash shall be made to open full width, and the top of each window shall be within six inches of the ceiling.

*Damp-proof Walls and Floors.*

PAR. 5.— (4.) The floor of such room shall be damp-proof and waterproof, and all walls surrounding such room shall be damp-proof.

*Sleeping Rooms.*

PAR. 6.— No room on any floor of any house or building now existing or hereafter erected, which floor is in whole or in part below the highest point of the curb of a public street or way in front and within twenty-five feet of the outside wall, and no room on any floor thereof, which floor is in whole or in part below the highest point of the ground adjacent to such building and within fifteen feet thereof, shall be occupied for sleeping purposes unless all of the following conditions are complied with:—

*To Abut on Outside Wall.*

PAR. 7.— (a.) Such room shall on at least one side abut on an outside wall of said building for a space of at least seven feet.

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*Windows, Area and Exposure.*

PAR. 8.—(b.) Such room shall have a window or windows opening directly upon an open space not less than fifteen feet square, and open from the ground to the sky without obstruction; such window or windows shall have a total area of not less than ten square feet and not less than one eighth of the floor area of said room, and both halves of the sash of each window shall be made to open to their full width, and the top of each window shall be within six inches of the ceiling.

PAR. 9.—(c.) At least sixty per cent of the area of any such room shall be above the level of the highest point of the ground within fifteen feet of the outside wall or walls of said room and in which the windows above required are situated.

*Floors and Walls to be Waterproof.*

PAR. 10.—(d.) The floor of such room and all walls surrounding such room shall be damp-proof and waterproof.

*Height Of.*

PAR. 11.—(e.) Such room shall be at least eight feet six inches in height in every part, from floor to ceiling: *provided*, that in tenement houses erected prior to the first day of August, nineteen hundred and seven, and in other houses and buildings erected prior to the first day of June, nineteen hundred and fourteen, it shall be sufficient if said room is seven feet in height over at least four fifths of its area.

*Water-closets — Construction, Arrangement.*

PAR. 12.—(f.) There shall be appurtenant to such room a water-closet constructed and arranged as required by section sixty-nine, and used solely by the occupants of said room or by the household of which said occupants are members.



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*Sleeping Rooms.*

PAR. 13.—(g.) No such room shall be occupied for sleeping purposes without a permit from the board of health, such permit to be posted in a conspicuous place in the main room of the apartment. A record of all such permits shall be kept in the office of the board of health.

*Requirements when Exempted.*

PAR. 14.—(h.) Whenever basement rooms which do not comply with all the technical requirements of this act are, in the opinion of the board of health, supplied with sufficient light and ventilation and are suitable rooms for living and sleeping purposes, the board, after an inspection of the premises and a report in writing as to the area, capacity and other conditions, may issue a certificate to the owner of the building stating that, in the opinion of the board, such rooms are fit to be occupied for living and sleeping purposes. The issue of the said certificate shall operate as an exemption from the technical requirements of this section in all the particulars set forth in said certificate: *provided*, that said certificate is kept at all times posted in a conspicuous place in such room. A file and record of all such reports and certificates shall be kept in the office of the board of health. Said board may revoke the certificate if such room, in its opinion, ceases to be suitable for the purposes named in the certificate.

[1914, c. 628, sect. 1; 1915, c. 346, Special Act.]

## SECTION 69.

WATER-CLOSETS IN TENEMENT HOUSES HEREAFTER  
ERECTED.

PAR. 1.—In every tenement house hereafter erected there shall be a separate water-closet in a separate compartment within each apartment of four or more rooms.

## Sect. 69, Par. 1.]

Where apartments consist of less than four rooms there shall be at least one water-closet for every three rooms. and on the same floor with said rooms. Every such water-closet shall be placed in a compartment completely separated from every other water-closet, and such compartment shall be not less than two feet and four inches wide, and shall be inclosed with plastered partitions, or some equally substantial material, which shall extend to the ceiling. Such compartment shall have a window, opening directly, or through a straight horizontal shaft of the same dimensions as the window and not more than four feet long, upon a street, a railroad right of way, cemetery or public park or a yard or alley or open passageway not less than four feet wide, or upon a court vent or upon a covered passageway not more than twenty feet long and at least twenty feet wide, and twenty feet high. Every such window shall be at least one foot by three feet between stop beads; and the whole window shall be made so as to open readily. When, however, such water-closet compartment is located on the top floor and is lighted and ventilated by a skylight over it, no window shall be necessary, provided that the roof of such skylight contains at least three square feet of glazed surface and is arranged so as to open readily. Nothing in this section in regard to the separation of water-closet compartments from each other shall apply to a general toilet room containing several water-closets, hereafter placed in a tenement house, provided that such water-closets are supplemental to the water-closet accommodations required by law for the use of the tenants of the said house. Nothing in this section in regard to the ventilation of water-closet compartments shall apply to a water-closet hereafter placed in an existing tenement house, to replace a defective fixture in the same position and location. No water-closet shall be maintained in the cellar of any tenement house

Sect. 69, Par. 1.]

without a permit in writing from the board of health; and said board shall have power to make rules and regulations governing the maintenance of such closets. Every water-closet compartment in any tenement house shall be provided with proper means of lighting the same at night. If fixtures for gas or electricity are not provided in such compartment, then the door of such compartment shall be provided with translucent glass panels, or with a translucent glass transom, not less in area than four square feet. The floor of every such water-closet compartment shall be made waterproof with asphalt, tile, stone or some other waterproof material; and such waterproofing shall extend at least six inches above the floor on all sides of the compartment except at the door opening so that the floor can be washed or flushed without leaking. No drip trays shall be permitted. No water-closet fixtures shall be inclosed with any woodwork.

## SECTION 70.

### LIGHTING AND VENTILATION OF EXISTING TENEMENT HOUSES.

PAR. 1.—Excepting water-closet compartments and bathrooms, wherever a room in any tenement house has a window or windows of less than nine square feet of glazed surface opening on a street, a railroad right of way, cemetery, public park, alley or open passageway not less than ten feet in width, such window or windows shall be enlarged and provided with the above mentioned glazed surface, and wherever such room does not open as above provided or opens upon an alley or open passageway less than ten feet in width or upon a shaft or upon a court less than six feet in its least dimension, then such room shall be provided with a sash window communicating with another room in the same apartment, having windows of at least the superficial area prescribed for the

Sect. 70, Par. 1.]

windows of rooms in tenement houses hereafter erected and opening on a street, a railroad right of way, cemetery, public park or alley or open passageway at least ten feet in width, or on a court or courts at least equivalent to the courts required in sections fifty-eight and fifty-nine; and such new sash window shall contain not less than fifteen square feet of glazed surface and shall be made so as to open readily. One wall of every alcove in an existing tenement house shall be provided with an opening equal in area to eighty per cent of the wall. No tenement house shall be so altered as to reduce the provisions for the light and ventilation of any room or alcove or public hall or stair hall below the requirements of this act.

## SECTION 71.

### SKYLIGHTS.

#### *Existing Tenement Houses.*

PAR. 1.— In every existing tenement house there shall be in the roof, directly over each stair well, a ventilating skylight, provided with ridge ventilators and also with fixed or movable louvres or movable sashes. But this section shall not apply to any tenement house now having windows as provided in section sixty-five or a bulkhead in the roof over the main stairs, which bulkhead is provided with windows made so as to open readily and with not less than twelve square feet of glass in the top of the bulkhead. All skylights hereafter placed in any tenement house shall conform to the provisions of section sixty-six. All the existing dome lights or other obstructions to skylight ventilation shall be removed.

#### *Public Hall — Lighting Of.*

PAR. 2.— Where the public hall in an existing tenement house is not provided with windows opening as provided in section sixty-five, and where there is not a stair well as



Sect. 71, Par. 2.]

provided in section sixty-six, all doors leading from such public hall into apartments shall be provided with translucent glass panels of an area of not less than four square feet for each door; or such public hall may be lighted by a window or windows at the end thereof with the plane of the window at right angles to the axis of the hall, said window opening upon the street, a railroad right of way, cemetery, public park, or an alley or open passageway at least ten feet in width, or upon a yard or court of the dimensions hereinbefore provided.

## SECTION 72.

### WATER-CLOSETS IN EXISTING TENEMENT HOUSES.

PAR. 1.—In existing tenement houses the woodwork inclosing the space underneath the seat of all water-closets used in common by two or more families shall be removed and such space shall be left open. The floor or other surface beneath and around such closet shall be maintained in good order and repair, and the floors made waterproof to the satisfaction of the board of health.

### WATER-CLOSETS, NUMBER REQUIRED.

PAR. 2.—Every such water-closet shall be located in a compartment completely separated from every other water-closet, and such compartment shall be ventilated to the satisfaction of the board of health. There shall be provided at least one water-closet for every three families or for every nine rooms in every existing tenement house.

## SECTION 73.

### WATER SUPPLY.

#### *Tenement House Hereafter Erected.*

PAR. 1.—In every tenement house hereafter erected there shall be in each apartment a proper sink with running water.

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*Existing Tenement House.*

PAR. 2.—Every existing tenement house shall have water furnished in sufficient quantity at one or more places on each floor occupied by or suitable to be occupied by one or more families. The owner shall provide proper and suitable tanks, pumps or other appliances to receive and to distribute a sufficient supply of water at each floor in the said house at all times of the year, during all hours of the day and night.

*Sinks in Public Halls.*

PAR. 3.—The woodwork inclosing sinks located in the public halls or stairs shall be removed and the space underneath the sinks shall be left open. The floors and wall surfaces beneath and around the sink shall be maintained in good order and repair.

## SECTION 74.

## DRAINAGE OF COURTS AND YARDS.

*Tenement Houses.*

PAR. 1.—In every tenement house all courts, areas, intakes and yards shall be properly graded, drained and paved or otherwise surfaced to the satisfaction of the board of health.

## SECTION 75.

## RECEPTACLES FOR GARBAGE AND ASHES.

*Tenement House.*

PAR. 1.—The owner of every tenement house shall provide therefor suitable covered, water-tight receptacles satisfactory to the board of health, for ashes, rubbish, garbage, refuse and other matter. No person shall place ashes, rubbish, garbage, refuse or other matter in the

Sect. 75, Par. 1.]

yards, open areas or alleys connected with, or appurtenant to, any tenement house except in suitable receptacles provided for the same.

[Repealed so far as inconsistent with 1907, c. 550, sect. 128; as amended by 1913, c. 586, sect. 1.]

## SECTION 76.

### POWERS OF THE BUILDING COMMISSIONER.

PAR. 1.—The commissioner shall not dispense with any of the requirements of sections forty-two to seventy-five, inclusive.

## SECTION 77.

### THEATRES.

#### *Definition.*

PAR. 1.—Every building hereafter erected so as to contain an audience hall and a stage, with curtain, movable or shifting scenery, and machinery, adapted for the giving of plays, operas, spectacles or similar forms of entertainment, shall be a theatre within the meaning of this act. No existing building not now used as a theatre shall be altered and used as a theatre, unless it conforms to the provisions of this act for a new theatre.

[1921, c. 60, sect. 3.]

## SECTION 78.

### CONSTRUCTION.

PAR. 1.—Every theatre hereafter built shall be of first class construction, and the steel work of the stage, of the fly galleries, and of the rigging loft need not be fireproofed.

[1921, c. 60, sect. 4.]

## SECTION 79.

## OPEN COURTS.

PAR. 1.— Every theatre built in a block not on a corner shall have an open court or passageway on both sides extending from the proscenium line to the line of the street on the front, or, in case the building abuts on a street both in front and rear, these passages may extend from the line of the front of the auditorium to the line of the rear street. These passages shall be at least six feet wide throughout their length, and shall not be closed by any locked gate or doorway. They shall immediately adjoin the auditorium, or a side passage or lobby directly connected therewith. These passages shall be open to the sky opposite the whole depth of the auditorium, but may be carried out to the street front or rear through passages enclosed by brick walls or other fireproof material equally efficient, and covered by a solid brick vault at least eight inches thick, each passage to be not less than eight feet wide and ten feet high throughout.

## SECTION 80.

## INNER COURT.

PAR. 1.— Every theatre built upon the corner of two streets shall have one inner court on the side of the building away from the side street, such court to be of the same description as the courts provided for in the preceding paragraph.

## SECTION 81.

## STORES, ETC.

PAR. 1.— Nothing in this act shall be construed to prohibit the use of any part of a theatre building for stores, offices, or for habitation, provided that the parts so used shall be built with exits to the street entirely



Sect. 81, Par. 1.]

distinct from the rest of the building and shall be separated from the rest of the building by solid partitions or walls, without any openings in the same.

## SECTION 82.

### FLOOR LEVELS.

PAR. 1.— In all theatres, the entrances shall be not more than one step above the level of the sidewalk of the main street, and the stage shall be not more than five feet above the said level.

## SECTION 83.

### PROSCENIUM WALL.

PAR. 1.— The stage of every theatre shall be separated from the auditorium by a wall of fireproof construction, which wall shall extend the whole width of the auditorium and the whole height to the roof of the portion occupied by the stage. There shall be no openings through this wall except the curtain opening, one doorway each side behind the boxes, and one doorway which shall be located at or below the level of the stage, and plumbing, ventilating and such other pipe openings as may be approved by the building commissioner, such openings to be fire-stopped. The doorways shall not exceed twenty-one superficial feet each, and shall have standard fire-doors hung in a manner satisfactory to the commissioner. The finish or decorative features around the curtain opening of every theatre shall be of fire proof material.

[1921, c. 60, sect. 5.]

## SECTION 84.

### CURTAIN.

PAR. 1.— The proscenium or curtain opening of every theatre shall have a fire-resisting curtain reinforced by

Sect. 84, Par. 1.]

wire netting or otherwise strengthened. If of iron, or similar heavy material, and made to lower from the top, it shall be so arranged as to be stopped securely at a height of seven feet above the stage floor, the remaining opening being closed by a curtain or valance of fire-resisting fabric.

## SECTION 85.

### STAGE FLOOR.

PAR. 1.— The part of the stage floor, usually equal to the width of the proscenium opening, used in working scenery, traps or other mechanical apparatus, may be of wood, and no flooring used thereon shall be less than one and one eighth inches in thickness.

## SECTION 86.

### VENTILATORS.

PAR. 1.— There shall be one or more ventilators near the center, and above the highest part of the stage of every theatre, of a combined area of opening satisfactory to the commissioner, and not less than one tenth of the area of the undivided floor space behind the curtain at the stage floor level. The openings in every such ventilator shall be closed by valves or louvres so counter-balanced as to open automatically, which shall be kept closed, when not in use, by a fusible link and cord reaching to the prompter's desk, and readily operated therefrom. Such cord shall be of combustible material, and so arranged that if it is severed the ventilator will open automatically.

### SKYLIGHT COVERINGS FOR VENTILATOR.

PAR. 2.— Skylight coverings for ventilators shall have sheet metal frames set with double-thick glass, each pane thereof measuring not less than three hundred square

Sect. 86, Par. 2.]

inches, or shall be protected with wire glass. If wire glass is not used, a suitable wire netting shall be placed immediately beneath the glass, but above the ventilator openings. Illuminating fixtures over the auditorium shall be suspended and secured in a manner approved by the commissioner.

#### ILLUMINATING FIXTURES OVER AUDITORIUM.

PAR. 3.—Glass on illuminating fixtures over the auditorium shall be secured from danger of falling as the commissioner shall require, but in no case shall any glass more than six inches in diameter or length be hung over the auditorium unless protected from falling by a wire netting or similar device satisfactory to the commissioner.

### SECTION 87.

#### SEATS IN AUDITORIUM.

PAR. 1.—All seats in the auditorium excepting those contained in boxes shall be spaced not less than thirty inches from back to back, measured in a horizontal direction, and shall be firmly secured to the floor. No rows of seats in the auditorium shall contain more than fourteen seats between aisles and where there is but one aisle no row shall contain more than seven seats.

#### BALCONY AND GALLERY PLATFORMS.

PAR. 2.—The platforms for seats in balconies and galleries shall nowhere have a greater rise than twenty-one inches, nor be less than thirty inches from back to back.

[1921, c. 60, sect. 6.]

### SECTION 88.

#### AISLES.

PAR. 1.—All aisles on the respective floors in the auditorium, having seats on both sides of the same, shall

Sect. 88, Par. 1.]

be not less than thirty inches wide where they begin and shall be increased in width toward the exit in the ratio of one inch to five running feet. Aisles having seats on one side only shall be not less than two feet wide at their beginning and shall increase in width, the same as aisles having seats on both sides.

## SECTION 89.

### CHANGES IN LEVEL.

PAR. 1.— All changes in the levels of the floors of such buildings, except under stairways, from story to story, and except the necessary steps in galleries and balconies rising or declining toward the exits, shall be made by inclines or declines of no steeper gradient than two in ten within the auditorium, and rising toward the exits, and one in ten for all others.

[1921, c. 60, sect. 7.]

## SECTION 90.

### LOBBIES.

PAR. 1.— Preceding each division of the theatre there shall be foyers, lobbies, corridors, or passages, the aggregate capacity of which on each floor or gallery shall be sufficient to contain the whole number to be accommodated on such floor or gallery in the ratio of one square foot of floor room for each person.

## SECTION 91.

### STAGE DOORS.

PAR. 1.— There shall be not less than two exit doors each not less than three feet in width, located on opposite sides of the stage, and opening directly upon a street, alley, court, or courtway leading to a public thoroughfare.



## SECTION 92.

## ROOM EXITS.

PAR. 1.— All rooms in theatres for the use of persons employed therein shall have passages to at least two independent means of exit.

## SECTION 93.

## DOORS TO OPEN OUTWARD.

PAR. 1.— All doors of exit or entrance shall open outward, and shall be hung so as to swing in such a manner as not to become an obstruction in a passage or corridor, and no such doors shall be fastened so as to be inoperative when the building is occupied by an audience.

## SECTION 94.

## FALSE DOORS.

PAR. 1.— No mirrors shall be so placed as to give the appearance of a doorway or exit, hallway, or corridor, nor shall there be any false doors or windows.

## SECTION 95.

## MAIN FLOOR AND FIRST GALLERY EXITS.

PAR. 1.— A common exit may serve for the main floor of the auditorium and the first gallery, provided that its capacity be equal to the aggregate capacity of the outlets from the main floor and the said gallery; and provided that the lowermost run of any exit leading from a gallery shall not open directly at right angles with the central axis of a common exit unless there is a clear space or landing of at least one and one quarter times the width of the exit between the foot of such exit and such centre line or nearest exit doorway.

## SECTION 96.

## EXITS.

*Balcony and Gallery.*

PAR. 1.—Two distinct and separate exits shall be provided for each gallery and balcony above the main floor; and the same shall be located on opposite sides of the galleries.

PAR. 2.—All gallery or balcony exits shall start with a width of not less than four feet at the uppermost gallery.

PAR. 3.—Exits from balconies and galleries shall not communicate with the basement or cellar.

## SECTION 97.

## AGGREGATE WIDTH OF EXITS.

PAR. 1.—The aggregate width of all the exits previously described shall be estimated on a basis of not less than twenty inches for every one hundred persons for whom seats are provided in the sections of the auditorium served by the respective exits.

## SECTION 98.

## EMERGENCY EXITS.

PAR. 1.—In addition to the exits previously described there shall be one exit from each side of each gallery, balcony, and main floor of auditorium, at least five feet wide, leading to exterior balconies not less than four feet wide and twenty feet long on each side of the auditorium. From such balconies there shall be staircases extending to the ground level, which may be counterweighted, with risers of not over eight and one half inches and treads of not less than nine and one half inches, inclusive of nosing.

Sect. 98, Par. 1.]

The aggregate width of these emergency stairs shall be not less than ten inches for every one hundred people served thereby, no single stairs being less than thirty inches wide.

PAR. 2.— Where all such stairs are in an interior court, each run shall be covered by a light awning of iron.

PAR. 3.— Nothing herein shall prohibit the building of emergency stairs and exits inside the walls of the building, provided that they are surrounded by a fireproof partition not less than four inches thick separating the exits and stairways from the audience room or auditorium.

[1921, c. 60, sect. 8.]

## SECTION 99.

### ADDITIONAL REQUIREMENTS.

PAR. 1.— The commissioner shall have power to require a greater number or capacity of exits than is herein prescribed.

### ILLUMINATED EXIT SIGNS.

PAR. 2.— In every theatre there shall be over every exit, on the inside, and over every opening to a fire-escape, on the inside, an illuminated sign, bearing the word "exit" or "fire-escape," respectively, in letters not less than four inches high. The lights for the exit signs, passages, stairs, lobbies, auditoriums, rear of auditoriums, balconies, galleries, and for the balconies and stairs outside the building, shall be so arranged that they can be turned on or off independently of the means provided on the stage or in any part of the building in the rear of the proscenium wall. Every exit sign shall be kept illuminated, and every outside balcony and fire-escape shall be kept well lighted during the performance, except outside exits during a performance before sunset.

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### EXIT PLAN ON PROGRAM.

PAR. 3.— Plans showing the exits and stairways shall be legibly printed so as to occupy a full page of every programme or play-bill or shall be shown by stereopticon upon a moving picture screen at least once during the afternoon and evening for a period of not less than two minutes.

### GAS PIPE OUTLETS AND BURNERS.

PAR. 4.— In said buildings there shall be such number of gas pipe outlets as the commissioner may require, fitted with no less than two gas burners. Such burners shall be inspected and tried at least once in every three months by inspectors of the department, to ascertain if they are in proper working order. The inspector shall make a report of each visit, stating the condition of the burners and the action of the inspector in regard to them.

### DEFECTIVE BURNERS.

PAR. 5.— The commissioner shall have authority to order any defect in the working of such burners as are necessary for public safety to be remedied.

### EXISTING THEATRE BURNERS.

PAR. 6.— So much of this section as applies to the inspection of gas burners shall apply to buildings now used as theatres.

[1921, c. 60, sect. 9.]

## SECTION 100.

### STAIRS.

PAR. 1.— The cut of the stair stringers shall not exceed seven and one-half inches rise, nor be less than ten



Sect. 100, Par. 1.]

and one half inches tread. There shall be no flights of stairs of more than fifteen or less than three steps between landings.

## SECTION 101.

### LANDINGS OF STAIRS.

PAR. 1.—Every landing shall be at least four feet wide. When straight stairs return directly on themselves, a landing of the full width of both flights, without any steps, shall be provided. The outer line of landings shall be curved to a radius of not less than two feet to avoid square angles. Stairs turning at an angle shall have a proper landing without winders introduced at the turn except stairways leading to private boxes. No door shall open immediately upon a flight of stairs, but a landing at least two feet wider than the width of the door opening shall be provided between such stairs and such door. When two side flights connect with one main flight, no winders shall be introduced, and the width of the main flight shall be at least equal to the aggregate width of the side flights.

[1921, c. 60, sect. 10.]

## SECTION 102.

### HAND RAILS.

PAR. 1.—All enclosed stairways shall have, on both sides, strong hand-rails, firmly secured to the wall, about three inches distant therefrom and about three feet high above the stairs.

PAR. 2.—All stairways eight feet and over in width shall be provided with a central rail of metal or hard wood, not less than two inches in diameter, placed at a height of about three feet above the centre of the treads, supported

Sect. 102, Par. 2.]

on wrought metal or brass standards of sufficient strength, securely bolted to the treads or risers of the stairs; and at the head of each flight of stairs, and on each side of the landing, the post or standard shall be at least six feet in height, and the rail shall be secured to the post.

## SECTION 103.

### MEASUREMENTS FOR WIDTH OF STAIRS.

PAR. 1.—The width of all stairs shall be measured in the clear between the hand-rails.

PAR. 2.—No winding or circular stairs shall be permitted.

## SECTION 104.

### RADIATORS FORBIDDEN IN PASSAGEWAYS.

PAR. 1.—No coil or radiator or floor register shall be placed in any aisle or passageway used as an exit; but all such coils and radiators may be placed in recesses formed in the wall or partition to receive the same.

### HEATING APPARATUS LOCATION.

PAR. 2.—No boiler, furnace, engine or heating apparatus, except steam, hot water or hot air pipes or radiators shall be located under the auditorium or under any passage or stairway or exit of any theatre.

### SPRINKLERS AND STANDPIPES.

PAR. 3.—There shall be at least two two-inch high-service standpipes on the stage of every theatre, with ample provision of hose nozzles at each level of the stage on each side, and the water shall be kept turned on during the occupation of the building by an audience. The said pipes shall in no case be sealed, and shall have two gates, one

Sect. 104, Par. 3.]

above the other, with a proper test or waste valve; the lower gate to be kept open at all times. The proscenium opening of every theatre shall be provided with a two and one half inch perforated iron pipe, or equivalent equipment of automatic or open sprinklers, so constructed as to form, when in operation, a complete water curtain for the whole proscenium opening, and there shall be for the rest of the stage a complete system of fire apparatus and perforated iron pipes, automatic or open sprinklers. Such pipes or sprinklers shall be supplied with water by high pressure service, and shall be at all times ready for use.

## SECTION 105.

### PLACES OF PUBLIC ASSEMBLY.

#### *Hereafter Erected.*

PAR. 1.— Every building hereafter erected with a hall or assembly-room to contain a public audience of more than eight hundred persons, or with more than one superimposed gallery or balcony, shall be of fireproof construction throughout; except that halls or assembly-rooms, the mean level of the main floor of which is not more than five feet above the grade of the adjacent street, may have roofs of second class construction.

PAR. 2.— Every building hereafter erected with a hall or assembly-room to contain an audience of more than six hundred persons, the main floor of which is raised more than fifteen feet above the level of the principal street upon which it faces, shall be of fireproof construction throughout.

#### *Capacity.*

PAR. 3.— The capacity of a hall or assembly-room shall be estimated on the basis of six square feet for each person.

PAR. 4.— If several halls or assembly-rooms are provided in one building, their aggregate capacity shall be considered

Sect. 105, Par. 4.]

as determining whether or not the building shall be of fire-proof construction, unless the several halls are enclosed by or separated from each other by fireproof walls, or floors, with fireproof doors in the same, in which case the building may be of second class construction.

*Alterations to Conform to Act.*

PAR. 5.—No existing building shall be altered to contain a hall or assembly-room exceeding the foregoing dimensions, unless the whole building as altered shall conform to the provisions of this act.

*Seats.—Obstructions.*

PAR. 6.—All seats in places of public assemblage shall be spaced as hereinbefore provided, and, while such places of public assemblage are occupied by an audience, shall be secured in such manner as will be satisfactory to the building commissioner of the city of Boston. No temporary seats or other obstructions shall be allowed in any aisle, passageway or stairway of a place of public assemblage, and no person shall remain in any aisle, passageway or stairway of any building during any performance.

[1912, c. 370, sect. 1.]

*Existing Hall. Ways of Egress, Lighting Of.*

PAR. 7.—Every existing building containing a hall or assembly-room to which admission is not free, and to which the provisions of chapter four hundred and ninety-four of the acts of the year nineteen hundred and eight, relative to the licensing of public entertainments apply, shall have all the ways of egress from such building sufficiently lighted, and lighted in a manner satisfactory to the building commissioner, while the hall or assembly-room is occupied by an audience.

[1913, c. 50, sect. 1.]

[1921, c. 60, sect. 11.]



## SECTION 106.

## MOVING PICTURE SHOWS.

PAR. 1.—All moving picture shows shall be subject to the provisions of chapter one hundred and seventy-six and of chapter four hundred and thirty-seven of the acts of the year nineteen hundred and five, and of any amendments thereof or additions thereto now or hereafter made.

## SECTION 107.

## EXITS, ETC.

*Halls — Hereafter Erected.*

PAR. 1.—Every building hereafter erected containing a hall or assembly-room shall conform to all the aforesaid requirements as to exits, stairways, exit lights, aisles, and seats, which apply to theatres; provided, that the same are necessary for the preservation of public safety and are specially ordered by the building commissioner. All orders of the building commissioner under the provisions of this section shall be subject to the authority of a majority of the Board of Appeal, which may annul or modify such orders.

[1915, c. 352, sect. 5. Special Act.]

## SECTION 108.

## ROOF GARDENS.

PAR. 1.—Nothing herein contained shall prevent the placing of a roof garden, art gallery, or rooms for similar purposes above a theatre, provided the floor of the same forming the roof over such theatre shall be constructed of fireproof materials, and shall have no covering boards or sleepers of wood. Every roof over such garden or other rooms shall have all supports and rafters of steel, and, if covered, shall be covered with glass or fireproof material, or both.

## SECTION 109.

## EXITS FROM ROOF GARDENS.

PAR. 1.— Exits from roof gardens may communicate with stairs leading from the auditorium of the theatre, but they shall be at least four in number, not less than four feet six inches wide, and distinct and separate from each other from roof to street.

## SECTION 110.

## SUMMER THEATRES.

PAR. 1.— Summer theatres, if built without the building limits, and located thirty feet distant from any other building or structure or adjoining lot lines, and of no greater seating capacity than seven hundred and fifty persons, and not more than one story high, without balconies, or galleries, may be constructed as follows:—

PAR. 2.— The auditorium, without a cellar or basement, with open sides of double the number of exits as hereinbefore provided, opening directly into the surrounding courts or gardens at the grade level, and the adjoining dressing rooms, may be of wooden construction, but the stage shall be enclosed in brick walls not less than twelve inches thick, or shall be plastered on metal lathing throughout: *provided*, that the openings leading to the dressing rooms shall be provided with fire doors.

PAR. 3.— Otherwise, all protective features and arrangements shall comply with all previous sections of this title.

## SECTION 111.

## EXISTING THEATRES.

*Stairs — Stairways.*

PAR. 1.— All stairs of theatres shall have throughout proper hand-rails on both sides firmly secured to walls or

Sect. 111, Par. 1.]

to strong posts and balusters. Stairways twelve feet or more wide shall have one or more intermediate rails not more than eight feet apart and properly supported.

*Heating Apparatus — Location.*

PAR. 2.— No boiler, furnace, engine or heating apparatus, except steam, hot water or hot air pipes or radiators, shall be located under the auditorium nor under any passage or stairway or exit of any theatre.

*Illuminated Exit Signs — Emergency Lights.*

PAR. 3.— In every theatre there shall be over every exit, on the inside, and over every opening to a fire-escape, on the inside, an illuminated sign, bearing the word "exit" or "fire-escape," respectively, in letters not less than four inches high. An emergency arc light or its equivalent shall be installed in the auditorium, which light or lights, exit lights, and all lights in halls, corridors, or any part of the building used by the audience, except the general auditorium lighting, shall be fed independently of the stage lighting, and shall be controlled only from the lobby or other convenient place in the front of the house. Every exit sign shall be kept illuminated and every outside balcony and fire-escape shall be kept well lighted during the performance, except outside exits during a performance in the daytime and before sunset.

[1909, c. 313, sect. 1.]

*Exits to Open Outward — Plans of Exits on Programs.*

PAR. 4.— The exits and openings to fire-escapes of all theatres shall open outward and have fastenings on the inside only. They shall be unfastened during every performance and shall be so arranged that they can easily be opened from within. Plans showing the exits and stairways shall be legibly printed so as to occupy a full page of every programme or play-bill.

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*Temporary Seats.*

PAR. 5.— No temporary seats or other obstructions shall be allowed in any aisle, or stairway of a theatre, and no person shall remain in any aisle, or stairway of any such building during any performance.

[1908, c. 336, sect. 1.]

*Fire Curtain.*

PAR. 6.— The proscenium or curtain opening of every theatre shall have a fire-resisting curtain of incombustible material, reinforced by wire netting, or otherwise strengthened. If of iron, or similar heavy material, and made to lower from the top, it shall be so arranged as to be stopped securely at a height of seven feet above the stage floor, the remaining opening being closed by a curtain or valance of fire-resisting fabric. The curtain shall be raised at the beginning and lowered at the end of every performance, and shall be of proper material, construction and mechanism.

*Stage Ventilators.*

PAR. 7.— There shall be one or more ventilators near the centre and above the highest part of the stage of every theatre, of a combined area of opening satisfactory to the building commissioner, and not less than one tenth of the area of the proscenium opening. Every such ventilator shall have a valve or louvre so counterbalanced as to open automatically, and shall be kept closed, when not in use, by a fusible link and cord reaching to the prompter's desk, or any other place easily reached from the stage level and readily operated therefrom. Such cord shall be of combustible material, and so arranged that if it is severed the ventilator will open automatically.

[1908, c. 336, sect. 1.]



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*Standpipes — Sprinklers.*

PAR. 8.— There shall be at least two two-inch high-service standpipes on the stage of every theatre, with ample provision of hose nozzles at each level of the stage on each side, and the water shall be kept turned on during the occupation of the building by an audience. The said pipes shall in no case be sealed and shall have a gate and check valve and shall have a test valve placed between the gate valve and check valve. The proscenium opening of every theatre shall be provided with a two and one half inch perforated iron pipe or equivalent equipment of automatic or open sprinklers, as the commissioner may direct, so constructed as to form when in operation a complete water curtain for the whole proscenium opening and there shall be for the rest of the stage a complete system of fire apparatus and perforated iron pipes, automatic or open sprinklers. Such pipes or sprinklers shall be supplied with water by high pressure service, and shall be ready for use at all times.

[1908, c. 336, sect. 1.]

## SECTION 112.

## PLUMBING.

*Definition of Terms.*

PAR. 1.— The following terms shall have the meanings respectively assigned to them:—

PAR. 2.— “*Repair of leaks*” shall mean such repairs as are necessary to protect property, but do not involve any extensive change in construction.

PAR. 3.— “*Y-branches*” shall mean a branch at sufficient angle to direct the flow and prevent backing up.

PAR. 4.— “*Air pipes*” or “back air pipes” shall mean air pipes from traps that extend toward the main soil pipe of the outer air and connect with not more than three traps.

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PAR. 5.—“*Vent pipes*” shall mean general lines of back air pipes connecting with more than three fixtures.

PAR. 6.—“*Drain*” shall mean that part of the drainage system of a building extending through basement or cellar to sewer.

PAR. 7.—“*Soil pipe*” shall mean that part of the drainage system of a building, of four inches or more internal diameter, between basement or cellar and the highest fixture in the building.

PAR. 8.—“*Ventilation pipe*” shall mean the extension of the soil pipe from the highest fixture to and through the roof.

PAR. 9.—“*Surface drain*” shall mean a connection with drain in the basement to allow egress of surface water or overflow.

PAR. 10.—“*Fixture*” shall mean any receptacle or outlet placed for the purpose of disposing of waste water or other matter, and connecting with the waste, soil or drain pipe of a building.

## SECTION 113.

### REGISTRATION.

PAR. 1.—No plumber shall engage in or work at the business of plumbing unless he shall first have registered his name and place of business in the office of the commissioner, and no person shall by display of sign or plumbing material, or otherwise, advertise as a plumber unless he shall have been registered or licensed as such. Every master plumber shall conspicuously display his certificate or license within his place of business. Notice of any change in the place of business of a registered or licensed master plumber shall immediately be given by him to the commissioner.

[Chap. 103, Revised Laws.]

[Chap. 287, Acts of 1914.]

[Chap. 536, Acts of 1919.]

## SECTION 114.

## NOTICES.

PAR. 1.— Every plumber, before doing any work in a building, shall, except in the case of repair of leaks, file in the office of the commissioner a plan or sketch of the work to be performed; and no such work shall be done in any building without a written permit from the commissioner.

## SECTION 115.

## CONNECTION WITH SEWER OR DRAIN.

PAR. 1.— The plumbing of every building shall be separately and independently connected outside the building with the public sewer, if such sewer is provided, or with a proper and sufficient private drain or sewer laid outside of the building, and if a sewer is not accessible, with a proper cesspool. Several buildings may have a common sewer connection if such connection is approved by the commissioner and the superintendent of sewers.

## SECTION 116.

## INSPECTION AND TESTS.

PAR. 1.— Pipes or other fixtures shall not be covered or concealed from view until approved by the commissioner, who shall examine or test the same within two working days after notice that they are ready for inspection. Plumbing shall not be used unless, when roughed in, the wastes, vents and back air pipes and traps are first tested by water or sufficient air pressure in the presence of an inspector, when such testing is practicable.

## SECTION 117.

## SOIL AND WASTE PIPES AND TRAPS.

PAR. 1.— The waste pipe of every independent sink, basin, bath-tub, water-closet, slop-hopper, urinal or other

Sect. 117, Par. 1.]

fixture shall be furnished with a separate trap which shall be placed as near as practicable to the fixture which it serves. A sink and set of three wash-trays may be connected to the house drain through one five inch round trap, when the outlet of the sink is not over three feet six inches from the nearest outlet from the wash-trays; and in such case the trap shall be above the floor. The outlet from each fixture shall enter the trap separately. Not more than four wash-bowls or sinks in a continuous line may be connected to the house drain through one five inch round trap. Two or more fixtures on the same level with not more than two feet of waste pipe and connecting into the soil or waste pipe not more than eighteen inches below the top water line of the trap, shall not require other vent than the continuation of the soil or waste pipe full size for its whole length. Lateral branches of soil or waste pipe, if more than twenty feet in length, shall be extended through the roof undiminished in size. All connections on lead waste and back air pipes and of lead pipes to brass ferrule and soldering nipples shall be full size wiped soldered branch, round or flange joints. Soil and waste pipes shall have proper T-Y or Y branches for all fixture connections. No connection to lead bends for water-closets or slop sinks shall be permitted, except the required back air pipe where a continuous vent is not practicable.

#### EARTHENWARE TRAPS.

PAR. 2.—Earthenware traps shall have heavy brass floor plates soldered to the lead bends and bolted to the trap flange, and the joint made gas tight with red or white lead. Rubber washers for floor connections shall not be used.

#### BACK AIR PIPES, VENTS, ETC.

PAR. 3.—Traps shall be protected from siphonage or air pressure by special iron or brass air pipes of a size not less



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than the waste pipes they serve; back air pipes shall not be connected to the trap or branched into the waste pipe except where a continuous vent is not practicable, but a suitable non-siphon trap may be used without a back air pipe upon the approval of the commissioner. Back air pipes shall enter the waste pipe within eighteen inches from the trap and shall be a continuation of the waste pipe. Lead air pipes may be used only for short connections where they are exposed to view. Air pipes for water-closet traps shall be connected to the highest point of bend or trap, and may be of two inch bore if for not more than three fixtures and less than thirty feet in length; if for more than three fixtures or more than thirty feet in length they shall be of three inch bore. Air pipes shall be run as direct as practicable and if one and one half inches or less in diameter shall not exceed thirty feet in length. Two or more air pipes may be connected together or with a vent pipe; but in every such case the connection shall be above the top of the fixture. The trap for the upper fixture on a line of soil or waste pipe, within five feet of the stack in a horizontal line, shall not require a special air pipe, unless the outlet is branched into a stack more than eighteen inches below the top water line of the trap. Diameters of vent pipe shall be not less than two inches for main vents through less than seven stories; three inches for water-closets on more than three floors, and for other fixtures in more than seven stories. All vent pipes shall be increased one inch in diameter before passing through the roof. Vent lines shall be connected at the bottom with a soil or waste pipe or with the drain, in such a manner as to prevent accumulation of rust scale and properly to drip the water of condensation. Offsets shall be made at an angle of not less than forty-five degrees. Soil pipes or iron waste

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pipes, vents and back air pipes, shall be supported by clamps to the woodwork, iron drive hooks to brick walls, or bolted clamps to iron girders.

#### NON-SIPHON TRAPS — ROUND TRAPS.

PAR. 4.— All traps, except for water-closets, not provided with special air pipes shall be suitable non-siphon traps and shall have at least a four-inch water seal. Round traps shall be not less than four inches in diameter and eight inches long, and made of eight-pound lead. All traps screws shall be water sealed.

#### CHEMICAL LABORATORIES.

PAR. 1.— Fixtures and waste pipes in chemical laboratories shall be installed in accordance with plans approved by the commissioner.

#### STABLES.

PAR. 6.— The drainage of stable fixtures shall be constructed according to plans approved by the commissioner.

### SECTION 118.

#### BACK AIR PIPE.

PAR. 1.— In buildings where a series of bathrooms or kitchens are located directly over each other and have a common soil or waste pipe, the back air pipe required shall be a vent line connecting with each outlet branch close to the water-closet connection or outlet from the sink trap, each branch bent to connect to vent line above the top of the highest fixture on each floor, the vent line to connect to main bent line above the top of the highest fixture in the building.

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## BATTERIES OF WATER-CLOSETS.

PAR. 2.— In the case of batteries of water-closets or other fixtures the special air pipe from each trap may be omitted, provided that the soil or waste pipe, undiminished in size, is continued to a point above the roof or revented into the main soil pipe system above the top of the uppermost fixture.

PAR. 3.— The commissioner shall prepare explanatory sketches showing the method of construction described in this section.

## SECTION 119.

## REFRIGERATOR WASTES AND DRIP PIPES.

PAR. 1.— All drip or overflow pipes shall be extended to some place in open sight, and in no case shall any such pipe be connected directly with the drain pipe. No waste pipe from a refrigerator or other receptacle in which provisions are stored shall be connected directly with a drain or other waste pipe. The waste pipes from all other fixtures shall be connected directly with a drain pipe. Refrigerator wastes connecting with two or more stories shall be supplied with a trap on the branch for each floor and extended through the roof.

## SECTION 120.

## WATER-CLOSETS, ETC.

PAR. 1.— Every water-closet or line of water-closets shall be supplied with water from a tank or cistern, and shall have a flushing pipe of not less than one and one quarter inches in diameter. Privy vaults shall be of brick and cement of a capacity of not less than fifty cubic feet, of easy access, convenient to open, and clean, and water-tight. The inside shall be not less than two feet from the next lot and from any public or private way.

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## SECTION 121.

## SOIL AND WASTE PIPES DIMENSIONS.

PAR. 1.—The diameters of soil and waste pipes shall be not less than those given in the following table:—

	Inches.
Soil pipes . . . . .	4
Main waste pipes . . . . .	2
Main waste pipes for kitchen sinks on five or more floors . . . . .	3
Branch waste pipes for laundry tubs : . . . .	1½
Branch waste for kitchen sinks . . . . .	1½
Branch waste for urinals . . . . .	1½
No branch waste for other fixtures shall be less than,	1¼

## EXCEPTIONS.

PAR. 2.—Except that, with the approval of the commissioner, a three-inch soil pipe may be used for one water-closet where it is not practicable to use a four-inch pipe.

## FERRULES, CLEAN-OUTS, ETC.

Brass ferrules shall be of the best quality, bell-shaped, extra heavy cast brass, not less than four inches long and two and one quarter inches, three and one half inches, and four and one half inches in diameter, and of not less than the following weights:—

Diameters.	Weights.
2½ inches . . . . .	1 pound 0 ounces.
3½ inches . . . . .	1 pound 12 ounces.
4½ inches . . . . .	2 pounds 8 ounces

One and one-half inch ferrules shall not be used.



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## SOLDERING NIPPLES.

PAR. 3.—Soldering nipples shall be of heavy cast brass or of brass pipe, iron pipe size. If cast, they shall be of not less than the following weights:

1½ inches . . . . .	0 pounds 8 ounces.
2 inches . . . . .	0 pounds 14 ounces.
2½ inches . . . . .	1 pound 6 ounces.
3 inches . . . . .	2 pounds 0 ounces.
4 inches . . . . .	3 pounds 8 ounces.

## CLEAN-OUTS — SCREW CAPS.

PAR. 4.—Where clean-outs are used, the screw cap shall be of brass, extra heavy, and not less than one eighth of an inch thick. The engaging parts shall have not less than six threads of iron pipe size, and shall be tapered. Clean-outs shall be full size of trap up to four inches in diameter, and not less than four inches for larger traps.

PAR. 5.—The screw caps shall have a solid square or hexagonal nut, not less than one half inch high, with a least diameter of one and one half inches. The bodies of brass clean-out ferrules shall be at least equal in weight and thickness to the calking ferrule for the same size of pipe.

## LEAD PIPES, USE RESTRICTED.

PAR. 6.—The use of lead pipes is restricted to short branches of the soil and waste pipes, bends and traps, and roof connections of inside leaders. "Short branches" of lead pipe shall mean not more than:

- 5 feet of 1¼ inch pipe.
- 5 feet of 1½ inch pipe.
- 4 feet of 2 inch pipe.
- 2 feet of 3 inch pipe.
- 2 feet of 4 inch pipe.

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## LEAD PIPE — WEIGHT — THICKNESS.

PAR. 7.— The pipe shall be not less than the following average thickness and weight per linear foot:

Diameters.	Thicknesses.	Weights per Linear Foot.
1 $\frac{1}{4}$ inches	— —	2.50 pounds.
1 $\frac{1}{2}$ inches	.14 inch	2.68 pounds.
2 inches	.15 inch	3.61 pounds.
2 $\frac{1}{2}$ inches	.20 inch	5.74 pounds.
3 inches	.20 inch	5.74 pounds.
3 inches	.21 inch	7.54 pounds.
3 $\frac{1}{2}$ inches	.22 inch	9.00 pounds.
4 inches	.23 inch	10.66 pounds.
4 $\frac{1}{2}$ inches	.24 inch	12.34 pounds.
5 inches	.25 inch	14.50 pounds.
6 inches	.28 inch	18.76 pounds.
7 inches	.30 inch	23.27 pounds.
8 inches	.32 inch	28.18 pounds.
9 inches	.34 inch	33.70 pounds.
10 inches	.36 inch	40.06 pounds.
11 inches	.37 inch	45.02 pounds.
12 inches	.37 inch	48.98 pounds.

## BRASS PIPE.

PAR. 8.— Brass pipe for soil, waste, vent and back air pipes shall be thoroughly annealed, seamless, drawn brass tubing, of not less than number thirteen Stubbs gauge.

## LEAD AND IRON PIPE UNIONS — CONNECTIONS.

PAR. 9.— No slip joint or unions shall be used on traps, waste, vents or back air pipes. Threaded connections on brass traps shall be of the same size as pipe threads for the same size of pipe, and shall be tapered. Connections

Sect. 121. Par. 9.]

between lead and iron shall be made by brass sleeves or screw nipples wiped to the lead and calked or screwed into the iron.

### BRASS PIPE.

PAR. 10.—The following average thicknesses and weights per linear foot shall be used:—

Diameters.	Thicknesses.	Weights per Linear Foot.
1½ inches	.14 inch	2.84 pounds.
2 inches	.15 inch	3.82 pounds.
2½ inches	.20 inch	6.08 pounds.
3 inches	.21 inch	7.92 pounds.
3½ inches	.22 inch	9.54 pounds.
4 inches	.23 inch	11.29 pounds.
4½ inches	.24 inch	13.08 pounds.
5 inches	.25 inch	15.37 pounds.
6 inches	.28 inch	19.88 pounds.

### CAST IRON PIPES, ETC.

PAR. 11.—Cast iron pipes shall be uncoated, sound, cylindrical and smooth, free from cracks and other defects, of uniform thickness and of the grade known to commerce as “extra heavy.” If buried under ground they shall be coated with asphaltum or red lead.

PAR. 12.—Pipe, including the hub, shall weigh not less than the following average weights per linear foot:—

DIAMETERS.	Weights per Linear Foot.	DIAMETERS.	Weights per Linear Foot.
2 inches.....	5½ pounds.	7 inches (not stock size),	27 pounds.
3 inches.....	9½ pounds.	8 inches.....	33½ pounds.
4 inches.....	13 pounds.	10 inches.....	45 pounds.
5 inches.....	17 pounds.	12 inches.....	54 pounds.
6 inches.....	20 pounds.		

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PAR. 13.— All joints shall be made with picked oakum and molten lead run full, and be made gas tight. No cement joints nor connections between iron and cement or tile pipe or brick drains shall be made within any building.

#### WROUGHT IRON PIPE.

PAR. 14.— Galvanized wrought iron pipe shall be of not less than the following thickness and weight per linear foot:—

Diameters.	Thicknesses.	Weights per Linear Foot.
1½ inches	.14 inch	2.68 pounds.
2 inches	.15 inch	3.61 pounds.
2½ inches	.20 inch	5.74 pounds.
3 inches	.21 inch	7.54 pounds.
3½ inches	.22 inch	9.00 pounds.
4 inches	.23 inch	10.66 pounds.
4½ inches	.24 inch	12.34 pounds.
5 inches	.25 inch	14.50 pounds.
6 inches	.28 inch	18.76 pounds.
7 inches	.30 inch	23.27 pounds.
8 inches	.32 inch	28.18 pounds.
9 inches	.34 inch	33.70 pounds.
10 inches	.36 inch	40.06 pounds.
11 inches	.37 inch	45.02 pounds.
12 inches	.37 inch	48.98 pounds.

#### EXTRA HEAVY.

PAR. 15.— The threaded part of the pipe if less than one and one half inches long shall be of the thickness and weight known as “extra heavy” or “extra strong.”

#### FITTINGS.

PAR. 16.— Fittings on wrought iron vent or back air pipes shall be galvanized, recessed, cast iron threaded



Sect. 121, Par. 16.]

fittings. Fittings for "Plumber's tubing" shall be heavy weight, with sharp threads.

PAR. 17.— Fittings for waste or soil or refrigerator waste pipes of wrought iron or brass pipe shall be galvanized cast iron, or brass, recessed, and threaded drainage fittings, with smooth interior waterway and threads tapped so as to give a uniform grade to branches of not less than one quarter of an inch per foot.

### JOINTS.

PAR. 18.— All joints on wrought iron or brass pipe shall be screwed joints made up with red lead, and any burr formed in cutting shall carefully be reamed out.

## SECTION 122.

### DRAIN PIPES, ETC.

PAR. 1.— Drain and connecting ventilation pipes, vents and back air pipes shall be of sufficient size, and made of extra heavy cast iron pipe if under ground, and if above ground shall be made of extra heavy cast iron, galvanized wrought iron of standard weight, or of not less than number thirteen Stubbs gauge brass pipe within the building, except that lead pipes may be used for short connections exposed to view. Cast iron drains shall extend not less than ten feet from the inside face of the wall, beyond and away from the building.

PAR. 2.— Drain pipes above ground shall be secured by iron to walls, suspended from floor timbers by strong iron hangers, or supported on brick piers. Proper man-holes shall be supplied to reach clean-outs and traps. Every drain pipe shall have a fall of not less than one quarter inch per foot, and shall be extended from a point ten feet outside the inside face of the wall, unobstructed, to and through the roof, undiminished in size, and to a height

Sect. 122, Par. 2.]

not less than two feet above the roof, and not less than one foot above the top of any window within fifteen feet and not less than eight feet above the roof if the roof is used for drying clothes or as a roof garden. The drain pipe shall be supplied with a Y branch fitted with a brass clean-out or with an iron stopper, if required, on the direct run, at or near the point where the drain leaves the building. Changes in direction shall be made with curved pipes, and all connections with horizontal or vertical pipes shall be made with Y branches. Saddle hubs shall not be used. All drain pipes shall be exposed to sight within the building, if such exposure is practicable, and shall not be exposed to pressure where they pass through the wall.

#### STEAM EXHAUSTS, ETC.

PAR. 3.— No steam, or vapor, or water of a temperature over one hundred and thirty degrees Fahrenheit shall be discharged from any premises into any sewer, drain or catch-basin, nor shall any matter or thing be discharged into any sewer which may tend to cause an obstruction of the public sewer or a nuisance or a deposit therein or any injury thereto.

#### *Blow-Off Tanks.*

PAR. 4.— All high pressure steam boilers shall be connected with a blow-off tank of a capacity not less than thirty per cent of the largest boiler connected with such tank. The location of and the connections to said blow-off tank shall be subject to the approval of the superintendent of sewers.

#### *Steam Exhausts.*

PAR. 5.— No steam exhaust or steam drip, unless it be provided with a cooling tank of a capacity approved by the

Sect. 122, Par 5.]

superintendent of sewers, or unless it be connected with the blow-off tank, shall connect with any drain leading to the sewer. Every blow-off tank shall be supplied with a vapor pipe not less than two inches in diameter, which shall be carried above the roof and above the highest windows of the building.

*Blow-Off Tanks.— Additional Requirements.*

PAR. 6.— The superintendent of sewers may require such additional means for cooling the blow-off tanks by the injection of cold water or otherwise as may be necessary to reduce the temperature of the water passing from the blow-off tank so that it shall not exceed one hundred and thirty degrees Fahrenheit.

SECTION 123.

SPECIAL TRAPS, ETC.

*Grease — Gasolene.*

PAR. 1.— Every building from which, in the opinion of the superintendent of sewers, grease may be discharged in such quantity as to clog or injure the sewer, shall have a special grease trap satisfactory to the superintendent of sewers. Every building in which gasolene, naphtha or other inflammable compounds are used for business purposes shall be provided with a special trap, satisfactory to the superintendent of sewers, so designed as to prevent the passage of such material into the sewer, and ventilated with a separate pipe rising to a point four feet above the roof. All non-siphon traps shall be of a type approved by the commissioner. The waste pipe of every wash stand for vehicles shall be provided with a sand box of sufficient capacity.

PAR. 2.— The waste pipe from the sink of every hotel, eating house, restaurant or other public cooking establish-

Sect. 123, Par. 2.]

ment, shall be connected to a grease trap of sufficient size, easily accessible to open and clean, placed as near as practicable to the fixtures that it serves.

## SECTION 124.

### ROOF LEADERS AND SURFACE DRAINS.

PAR. 1.—Rain water leaders when connected with house drains shall be suitably trapped and, within the proposed surface drainage area, shall not be connected at the top of the stack, nor extended down through the interior of the building, except by special permit from the commissioner. Wherever a surface drain is installed in a cellar or basement, it shall be provided with a deep seal trap and back water valve. Drain pipes from fixtures in cellars and basements liable to back flow from a sewer shall be supplied with back water valves.

## SECTION 125.

### HAZARDOUS BUILDINGS AND APPLIANCES FOR POWER AND HEAT.

#### *Permits — Publications.*

PAR. 1.—\*(No building shall be used for a grain elevator or for storage or manufacture of high combustibles or explosives, or for chemical or rendering works, without a permit from the commissioner, and) no engine, dynamo, boiler or furnace shall be placed in any building without a permit from the commissioner. Every application for such permit shall be in writing, shall be filed with the commissioner, and shall set forth the character of the building, the size, power and purpose of the apparatus, and such other information as the commissioner may require. The commissioner may, after an examination

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\* Portion in parenthesis superseded by c. 795, sects. 3, 6, 7 and 29 of Acts of 1914, Fire Prevention Act.]

Chapter 795, superseded by General Laws, chapter 148.



Sect. 125, Par. 1.]

of the premises described in the application, and after hearing the applicant and any objectors, issue a permit for placing a boiler or furnace on such premises, upon such conditions as he shall prescribe, or he may refuse such permit. If the application is for anything other than a boiler or furnace the applicant shall publish in at least two daily newspapers published in the city of Boston, and on at least three days in each, and, if so directed by the commissioner, shall also post conspicuously on the premises, a copy of the application, and shall deliver copies thereof to such persons as the commissioner may designate.

PAR. 2.— If no objection is filed with the commissioner before the expiration of ten days after the time of the first publication of notice, or within ten days of the delivery and first posting of the notice, if such delivery or posting is required, the commissioner shall, if the arrangement, location, and construction of the proposed apparatus is proper, and in accordance with the provisions of this act, issue a permit for the same. If objection is filed, the application shall be referred to the board of appeal, which may, in its discretion, require the deposit by the objector of a reasonable sum as security for the payment of the costs.

PAR. 3.— After such notice as the board shall order it shall hear the same, and shall direct the commissioner to issue a permit, under such conditions as it may prescribe, or to withhold the same. If the permit is refused, the applicant, and if it is granted, the objectors shall pay such costs as the board may order.

PAR. 4.— The commissioner may, from time to time, after public notice and hearing, prescribe conditions on which any or all boilers or furnaces may be maintained in buildings, and, if any person interested objects to such conditions and appeals from his decision establishing the same, the appeal shall be referred to the board of appeal, and thereupon said board shall prescribe the conditions.

## SECTION 126.

## COMBUSTIBLE MATERIALS.

*Storage Prohibited.*

PAR. 1.—No building adapted for habitation, nor any part thereof, nor the lot upon which it is located, shall be used as a place for the storage, keeping or handling of any combustible article, except under such conditions as may be prescribed by the fire commissioner. No such building nor any part thereof, nor of the lot upon which it is located, shall be used as a place for the storage, keeping or handling of any article dangerous or detrimental to life or health, nor for the storage, keeping or handling of feed, hay, straw, excelsior, cotton, paper stock, feathers or rags.

[Superseded by 1914, c. 795, sects. 6, 7, Fire Prevention Act.]

Chapter 795, superseded by General Laws, Chapter 148.

## SECTION 127.

## ENFORCEMENT OF ACT.

*Safety of Building — Owner Responsible.*

PAR. 1.—Every structure and part thereof and appurtenant thereto shall be maintained in such repair as not to be dangerous. The owner shall be responsible for the maintenance of all buildings and structures. The lessee under a recorded lease shall be deemed the owner under the provisions of this act.

## SECTION 128.

## POWERS OF THE BOARD OF HEALTH.

*Limitation of Number of Occupants in Habitation.*

PAR. 1.—The board of health may by vote limit the number of occupants who shall be permitted to dwell in

Sect. 128, Par. 1.]

any building or in any part or parts thereof. They shall cause a copy of any such vote to be served upon the owner of the building, his agents, tenant or other persons having the charge thereof. If the owner, agent, tenant, or other persons having charge of said building allow or permit more people than are permitted by said vote to occupy the building or any part or parts thereof, said board may order the premises to be vacated, and they shall not again be occupied without the permission of the board, and the owner, agent, tenant or other persons having charge of said building shall forfeit not more than twenty dollars for every day during which he violates such order. The board may make such further regulations as to overcrowding, ventilation, the construction of water-closets, the lighting of hallways, and the occupation of buildings or parts thereof, not inconsistent with other laws, as they may deem proper. Said board may permit rooms in private stables to be occupied for sleeping purposes by grooms and coachmen.

*Ashes — Garbage.*

PAR. 2.— No person shall place ashes, rubbish, garbage, refuse or other matter in the yards, open areas or alleys connected with or appurtenant to any such building except in suitable receptacles provided for the same.

PAR. 3.— Every building used for habitation by more than two families and every lodging house shall be carefully inspected at least twice a year under the direction of the board of health, and whenever said board has made an order concerning such a building a reinspection shall be made within ten days after the board has been informed that the order has been complied with.

[1913, c. 586, sect. 1.]

## SECTION 129.

## ENFORCEMENT — JURISDICTION IN EQUITY.

*On Application of City Attorney.*

PAR. 1.— Any court having jurisdiction in equity or any justice thereof, shall upon the application of the city by its attorney, have jurisdiction in equity:—

*Injunction Restraining Use.*

PAR. 2.— To restrain the construction, alteration, repair, maintenance, use or occupation of a building, structure or other thing constructed or used in violation of the provisions of this act, and to order its removal or abatement as a nuisance;

*Restraining Construction, Use, Etc.*

PAR. 3.— To restrain the further construction, alteration, repair, maintenance, use or occupation of a building, structure or other thing, which is unsafe or dangerous;

PAR. 4.— To restrain the unlawful construction, alteration, repair, maintenance, use or occupation of any building, structure or other thing;

PAR. 5.— To compel compliance with the provisions of this act;

PAR. 6.— To order the removal by the owner of a building, structure or other thing unlawfully existing, and to authorize the commissioner, with the written approval of the mayor, in default of such removal by the owner, to remove it at the owner's expense.

*Board of Appeal Decisions, Court May Review.*

PAR. 7.— Any person, the value of whose property may be affected by any decision of the board of appeal, may have the action of said board reviewed by the court by any appropriate process, provided that proceedings are instituted within thirty days after the date of such decision.



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PAR. 8.— The person applying for the review shall file a bond with sufficient surety, to be approved by the court, for such sum as shall be fixed by the court, to indemnify and save harmless the person or persons in whose favor the decision was rendered from all damages and costs which they may sustain in case the decision of said board is affirmed.

PAR. 9.— In case the decision of the board is affirmed the court, on motion, shall assess damages, and execution shall issue therefor.

### *Right To Enter Any Building.*

PAR. 10.— Any person having any duty to perform under the provisions of this act may, so far as may be necessary for the performance of his duties, enter any building or premises in the city of Boston.

## SECTION 130.

### JURISDICTION AT LAW.

PAR. 1.— The municipal court of the city of Boston, concurrently with the superior court, shall have jurisdiction throughout the city of prosecutions and proceedings at law under the provisions of this act, and also of all provisions of law relative to plumbing and gas-fitting.

## SECTION 131.

### PROCEDURE.

PAR. 1.— Under the entry of any case brought under the provisions of this act the court shall, at the request of either party, advance the case, so that it may be heard and determined with as little delay as possible.

## SECTION 132.

## NUISANCE.

*Any Building Erected or Maintained in Violation of this Act.*

PAR. 1.—A building or structure which is erected or maintained in violation of the provisions of this act shall be deemed a common nuisance without other proof thereof than proof of its unlawful construction, and the commissioner may abate and remove it in the same manner in which boards of health may remove nuisances under the provisions of sections sixty-seven, sixty-eight and sixty-nine of chapter seventy-five of the Revised Laws.

PAR. 2.—Whoever violates any provision of this act, or whoever builds, alters, or maintains any structure or any part thereof in violation of any provision of this act, shall be punished by a fine not exceeding five hundred dollars, except as hereinbefore provided.

[1913, c. 586, sect. 2. See R. L., c. 104.]

\* NOTE.—The provisions of sections 67, 68 and 69 of chapter 75, R. L., have been superseded by General Laws, chapter 111, sections 123, 124, 125.

## SECTION 133.

## REPEALS.

PAR. 1.—So much of chapter four hundred and nineteen of the acts of the year eighteen hundred and ninety-two and of all acts in amendment thereof as is unrepealed is hereby repealed. So much of any other act as is inconsistent herewith is hereby repealed.

## SECTION 134.

PAR. 1.—This act shall take effect upon the first day of August in the year nineteen hundred and seven.

*[Approved June 22, 1907.]*



## APPENDICES.





## TITLE OF ACTS IN CHRONOLOGICAL ORDER.

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- 1873, Chap. 4. An Act to Authorize the Erection of Wooden Buildings in the City of Boston for Sanitary Purposes.
- 1889, Chap. 129. An Act Relating to Buildings in the Public Parks of the City of Boston.
- 1893, Chap. 462. An Act to Authorize the Establishment of a Building Line on Public Ways. (Restrictions as to Building.)
- 1897, Chap. 219. An Act to Provide for the Protection of the Public Health in the City of Boston. (Buildings May be Vacated or Torn Down.)
- 1898, Chap. 452. An Act Relative to the Height of Buildings on and near Copley Square, in the City of Boston.
- 1899, Chap. 457. An Act to Limit the Height of Buildings in the Vicinity of the State House. (Height Limit, Seventy Feet.)
- 1902, Chap. 543. An Act Relative to the Improvement of the State House and to the Height of Buildings on Beacon Street and Bowdoin Street in the City of Boston.
- 1904, Chap. 333. An Act Relative to the Height of Buildings in the City of Boston.
- 1905, Chap. 383. An Act Relative to the Height of Buildings in the City of Boston.
- 1907, Chap. 416. An Act Relative to the Height of Buildings on Rutherford Avenue in the City of Boston. (Height Limit One Hundred Feet.)

- 1907, Chap. 463. An Act Relative to the Licensing of Theatres and Public Halls in the City of Boston.
- 1910, Chap. 284. An Act Relative to the Construction, Alteration, Inspection and Maintenance of Buildings in the City of Boston. (Building Department to enforce Building Laws in Boston Heretofore Enforced by District Police.)
- 1910, Chap. 571. An Act to Authorize the Collection of Fees for Permits, and Licenses Issued by Departments of the City of Boston.
- 1911, Chap. 342. An Act to Regulate the Construction of Garages in the City of Boston.
- 1912, Chap. 259. An Act Relative to the Construction of Garages in the City of Boston.
- 1913, Chap. 280. An Act to Authorize the Mayor of the City of Boston to Grant Permits for Special Moving Picture Exhibitions in Churches, Halls, or Other Buildings.
- 1913, Chap. 577. An Act to Regulate the Erection and Maintenance of Garages in the City of Boston.
- 1913, Chap. 729. An Act Relative to Dry Houses in the City of Boston.
- 1914, Chap. 782. An Act to Amend the Building Law of the City of Boston. Elevators Hereafter Erected to be Enclosed in Shafts, Etc.
- 1914, Chap. 786. An Act Exempting a Certain Parcel of Land in the City of Boston from Restrictions as to Height of Buildings, Washington Street, corner Lovering Place.
- 1915, Special Act, Chap. 254. An Act Relative to the Erection of Buildings in the City of Boston. Making the Use of Certain Buildings Lawful.
- 1915, Special Act, Chap. 306. An Act Relative to the Shirley-Eustis Mansion on Shirley Street in the City of Boston.

- 1915, Special Act, Chap. 333. An Act Relative to the Height of Buildings in the City of Boston. Revising Boundaries of Districts A and B.
- 1916, Special Act, Chap. 86. An Act Relative to the Use of Public School Property of the City of Boston for Social, Civic and Other Purposes.
- 1918, Special Act, Chap. 115. An Act to Allow Metal Garages of Limited Size in Certain Sections of the City of Boston.
- 1919, Special Act, Chap. 32. An Act to Require the Registration of Hospitals in the City of Boston.
- 1919, Special Act, Chap. 163. An Act Relative to the Construction, Alteration and Maintenance of Hospitals in the City of Boston.
- 1920, Chap. 298. An Act Relative to the Operation of Elevators by Minors.
- 1920, Chap. 455. An Act Relative to the Limitation in Height of Buildings on Land, between Dartmouth Street and Trinity Place, in the City of Boston.
- 1920, Chap. 645. An Act Relative to Automatic Sprinklers in Tenement Houses in the City of Boston.
- 1921, Chap. 109. An Act Exempting Certain Buildings in the City of Boston from the Laws Relative to Fire Protection in Stables for Horses and Mules.
- 1921, Chap. 137. An Act to Establish Harbor Lines in South Bay in the City of Boston.
- 1921, Chap. 298. An Act Relative to the Operation of Elevators by Minors.
- General Laws, Chap. 4, Sect. 7. Definition—Statutes. Meaning of Certain Words in Constructing Same.
- General Laws, Chap. 49, Sect. 21. Spite Fences in Excess of 6 Feet in Height.
- General Laws, Chap. 82, Sect. 37. Building Lines.
- General Laws, Chap. 83, Sect. 5. Storm Water. Separate Systems of Plumbing.



General Laws, Chap. 85, Sects. 8 and 9. Signs and Other Structures Projecting into Ways.

General Laws, Chap. 139, Sects. 1 and 3. Common Nuisances. Burnt or Dangerous Buildings.

General Laws, Chap. 140, Sects. 33, 35, 38, 40. Licenses. Public Lodging Houses.

General Laws, Chap. 142. Supervision of Plumbing.

General Laws, Chap. 143. Inspection, Regulation and Licenses for Buildings, Elevators and Cinematographs.

General Laws, Chap. 148. Fire Prevention.

General Laws, Chap. 149, Sect. 126. Doors not to be Locked During Working Hours in Operative Buildings.

General Laws, Chap. 184, Sect. 15. General Provisions Relating to Real Property Proceedings Affecting Title to Realty Binding on Third Parties.

General Laws, Chap. 272, Sect. 86. Stables. Exits. Sprinklers.

Revised Ordinances of 1911, Chap. 41. Concerning the Building Limits.

Revised Ordinances of 1914, Chap. 8. Concerning Control of Building Operations, Person in Charge to be Licensed.

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#### CHAPTER 4, ACTS OF 1873.

AN ACT TO AUTHORIZE THE ERECTION OF WOODEN BUILDINGS IN THE CITY OF BOSTON FOR SANITARY PURPOSES.

*Be it enacted, etc.:*

SECTION 1. The City of Boston is hereby authorized to erect, under directions of its board of health and inspector of buildings, any wooden buildings within the city, for hospital purposes, the same to remain only so

long as said board deems it necessary: *provided*, that every such hospital shall be constantly guarded outside by a competent force of at least three of the police of said city.

SECT. 2. This act shall take effect upon its passage.

*January 28, 1873.*

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## CHAPTER 129, ACTS OF 1889.

### AN ACT RELATING TO BUILDINGS IN THE PUBLIC PARKS OF THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. The park commissioners of the city of Boston may erect in the parks of said city that now are or hereafter may be under their control, except the common, public garden and public squares, structures for the shelter and refreshment of persons frequenting such parks, and for other park purposes, of such materials and in such places as in the opinion of the fire commissioners of said city do not endanger buildings beyond the limits of the park. Section sixteen of chapter fifty-four of the Public Statutes and chapter three hundred and seventy-four of the acts of the year eighteen hundred and eighty-five shall not apply to such buildings.

SECT. 2. This act shall take effect upon its passage.

*Approved March 18, 1889.*

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## CHAPTER 462, ACTS OF 1893.

### AN ACT TO AUTHORIZE THE ESTABLISHMENT OF A BUILDING LINE ON PUBLIC WAYS.

*Restrictions as to Building.*

SECTION 1. The board or officers having authority to lay out city or town ways may in the manner prescribed

by law for giving notice of an intention to lay out any such way, give notice of an intention to establish a building line parallel to, and not more than twenty-five feet distant from, any exterior line of a highway or city or town way, and after said notice may pass a vote establishing such building line, and in the case of a city, upon the recording of said vote in the records of the city, or in a town, upon the acceptance of said vote by the inhabitants of the town at a town meeting called as provided for by law, said building line shall be established; and until another building line shall thereafter be established in the same manner, no structure shall thereafter be erected, placed or maintained between such building line and such way, except that steps, windows, porticos and other usual projections appurtenant to the front wall of a building, may be allowed in such restricted space to the extent prescribed in the vote establishing such building line.

*Damages.*

SECT. 2. Any person sustaining damage by reason of the establishment of such building line shall have the same remedies for obtaining payment therefor as may be prescribed by law for obtaining payment for damages sustained by the laying out of a highway in such city or town.

SECT. 3. This act shall take effect in any city when accepted by the city council thereof, and in any town when accepted by a majority of the legal voters thereof present and voting thereon at a town meeting called for that purpose.

[Approved June 9, 1893.]

*Building Lines Established.*

1. Beacon street, River street to Beaver street  
January 5, 1895.

2. Beacon street (both sides), Arlington street to  
Massachusetts avenue, January 5, 1895.

3. Beacon street (northerly side), between Somerset street and Bowdoin street, November 6, 1900.

4. Boylston street, Back Bay Fens to Brookline, avenue, October 4, 1894.

5. Beech street, West Roxbury (northeast side), between Centre street and railroad, February 29, 1916.

6. Columbia road, Edward Everett square to the railroad. Established by park commissioners.

7. Columbia road (southeast side), Hamilton street to Richfield street, January 28, 1915.

8. Grove street, West Roxbury (both sides), between Washington street and Centre street, March 9, 1916.

9. Jersey street, July 15, 1898; Landsdowne street, November 7, 1906.

10. Peterborough street, February 1, 1901.

11. Queensberry street, July 15, 1897.

[See General Laws, chapter 82, section 37, which seems to supersede the above act.]

### *Parkways.*

There is a twenty-five foot building line on the following locations (established by the Park Commissioners):

Riverway, from Longwood avenue to Huntington avenue.

Jamaicaway, from Huntington avenue to Prince street.

Arborway, from Prince street to Forest Hills street, with the exception of two lots on Weld park.

Northwesterly boundary of Olmsted park, from Chestnut street to line of land of Henrietta S. Sargent.

West Roxbury Parkway on southerly boundary, from Walter street to Weld street; on westerly and a part of northerly boundary. See Suffolk Registry, Lib. 2384, Fol. 153 and Lib. 2730, Fol. 359.



## CHAPTER 219, ACTS OF 1897.

AN ACT TO PROVIDE FOR THE PROTECTION OF THE PUBLIC  
HEALTH IN THE CITY OF BOSTON.*Buildings may be Vacated or Torn Down.*

SECTION 1. Whenever the board of health of the city of Boston shall be of the opinion that any building or any part thereof in said city is infected with contagious disease, or by reason of want of repair has become dangerous to life, or is unfit for use because of defects in drainage, plumbing, ventilation or in the construction of the same, or because of the existence of a nuisance on the premises which is likely to cause sickness among its occupants, said board may issue an order requiring all persons therein to vacate or cease to use such building or part thereof stated in the order, for reasons to be stated therein as aforesaid. Said board shall cause said order to be affixed conspicuously to the building or part thereof; and to be personally served on the owner, lessee, agent, occupant or any person having the charge or care thereof, if the owner, lessee or agent cannot be found in the said city, or does not reside therein, or evades or resists service, then said order may be served by depositing a copy thereof in the postoffice of said city postpaid and properly inclosed and addressed to such owner, lessee or agent at his last known place of business or residence. Such building or part thereof shall be vacated within ten days after said order shall have been posted and mailed as aforesaid, or within such shorter time, not less than forty-eight hours, as in said order may be specified, and said building shall be no longer used; but whenever said board shall become satisfied that the danger from said building or part thereof has ceased to exist, or that said building has been repaired so as to be habitable, it may revoke said order. Whenever in the opinion of the board of health any building or part

thereof in said city is because of age, infected with contagious disease, defects in drainage, plumbing or ventilation, or because of the existence of a nuisance on the premises which is likely to cause sickness among its occupants, or among the occupants of other property in said city, or because it makes other buildings in said vicinity unfit for human habitation or dangerous or injurious to health, or because it prevents proper measures from being carried into effect for remedying any nuisance injurious to health, or other sanitary evils in respect of such other buildings, so unfit for human habitation that the evils in or caused by said building cannot be remedied by repairs or in any other way except by the destruction of said building or of any portion of the same, said board of health may order the same or any part thereof to be removed; and if said building is not removed in accordance with said order said board of health shall remove the same at the expense of the city.

[1899, c. 222, sect. 1.]

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## CHAPTER 452, ACTS OF 1898.

AN ACT RELATIVE TO THE HEIGHT OF BUILDINGS ON AND NEAR COPLEY SQUARE, IN THE CITY OF BOSTON.

*Height Limit, Ninety Feet.*

*Be it enacted, etc., as follows:*

SECTION 1. Any building now being built, or hereafter to be built, rebuilt or altered in the city of Boston, upon any land abutting on St. James avenue, between Clarendon street and Dartmouth street, or upon land at the corner of Dartmouth street and Huntington avenue, now occupied by the Pierce building, so called, or upon land abutting on Dartmouth street, now occupied by the Boston Public Library building, or upon land at the corner of Dart-

mouth street and Boylston street, now occupied by the new Old South Church building, may be completed, built, rebuilt or altered to the height of ninety feet, and no more; and upon any land or lands abutting on Boylston street, between Dartmouth street and Clarendon street, may be completed, built, rebuilt or altered to the height of one hundred feet and no more: *provided, however*, that there may be erected on any such building, above the limits hereinbefore prescribed, such steeples, towers, domes, sculptured ornaments and chimneys as the board of park commissioners of said city may approve

SECT. 2. The provisions of chapter three hundred and thirteen of the acts of the year eighteen hundred and ninety-six, and of chapter three hundred and seventy-nine of the acts of the year eighteen hundred and ninety-seven, so far as they limit the height of buildings, shall not be construed to apply to the territory specified and restricted in section one of this act.

SECT. 3. The owner of or any person having an interest in any building upon any land described in section one of this act the construction whereof was begun but not completed before the fourteenth day of January in the current year, who suffers damage under the provisions of this act by reason or in consequence of having planned and begun such construction, or made contracts therefor, for a height exceeding that limited by section one of this act for the locality where such construction has been begun, may recover damages from the city of Boston for material bought or actually contracted for, and the use of which is prevented by the provisions of this act, for the excess of cost of material bought or actually contracted for over that which would be necessary for such building if, not exceeding in height the limit prescribed for that locality by section one of this act, less the value of such materials as are not required on account of the limitations resulting from the provisions of this act, and

the actual cost or expense of any rearrangement of the design or construction of such building made necessary by this act, by proceedings begun within two years of the passage of this act, and in the manner prescribed by law for obtaining payment for damages sustained by any person whose land is taken in the laying out of a highway in said city.

SECT. 4. Any person sustaining damage or loss in his property by reason of the limit of the height of buildings provided for in this act, may recover such damage or loss from the city of Boston, by proceedings begun within three years of the passage of this act, and in the manner prescribed by law for obtaining payment for damages sustained by any person whose land is taken in the laying out of a highway in said city.

SECT. 5. This act shall take effect upon its passage.

*Approved May 23, 1898.*

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## CHAPTER 457, ACTS OF 1899.

### AN ACT TO LIMIT THE HEIGHT OF BUILDINGS IN THE VICINITY OF THE STATE HOUSE.

#### *Height Limit, Seventy Feet.*

*Be it enacted, etc., as follows:*

SECTION 1. Any building now being built or hereafter to be built, rebuilt or altered in that part of the city of Boston which lies within the following described territory, to wit:—Beginning at the corner of Beacon street and Hancock avenue, thence continuing westerly on Beacon street to Joy street, thence continuing northerly on Joy street to Myrtle street, thence continuing easterly on Myrtle street to Hancock street, thence continuing southerly on Hancock street and Hancock avenue to the point of beginning,—may be completed, built, rebuilt or altered to the height of seventy feet measured on its principal front and no higher, and any part of a building on



or within ninety-five feet of Beacon street, between the Clafin Building, so-called, and Park street, may be completed, built, rebuilt or altered to the height of seventy feet above the highest grade of said part of Beacon street, and no higher: *provided, however*, that there may be erected on any such building such chimneys, pipes, water tanks and elevator houses as the Governor and Council may approve.

[1901, c. 525, sect. 4.]

SECT. 2. If and in so far as this act, or proceedings to enforce it, may deprive any person of rights existing under the Constitution, any such person now owning land within the district above described, sustaining damages in his property by reason of the limitations of the height provided for in this act of any building on or to be placed on such land may recover from the Commonwealth such damages as determined by a jury of the superior court for the county of Suffolk, on his petition therefor filed in the office of the clerk of said court within one year after the passage of this act, such determination and payment of the damages to be made under the same rules of law, so far as applicable, as govern the determination and payment of damages for the taking of lands for highways in said city.

SECT. 3. This act shall take effect upon its passage.

[Approved June 2, 1899.]

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## CHAPTER 543, ACTS OF 1902.

AN ACT RELATIVE TO THE IMPROVEMENT OF THE STATE HOUSE AND TO THE HEIGHT OF BUILDINGS ON BEACON STREET AND BOWDOIN STREET IN THE CITY OF BOSTON.

*Height Limit, One Hundred Feet. and Seventy Feet*

SECTION 1. Any part of any building abutting on or within forty-two feet of Bowdoin street between Allston

street and Beacon street may be completed, built, rebuilt or altered to the height of one hundred feet above the highest grade of that part of said Bowdoin street on which the building abuts as such grade has been changed and established by the governor and council and no higher, and any part of any building on or within ninety-five feet of Beacon street between the Claflin building, so-called, and Park street may be completed, built, rebuilt, or altered to the height of seventy feet above the highest grade of said Beacon street and no higher: *provided, however,* that there may be erected on any such building, such chimneys, pipes, water tanks, elevator houses and ornamental features which shall not increase the interior capacity of said building as the governor and council may approve.

SECT. 2. Any person owning land on or within forty-two feet of Bowdoin street, between Allston street and Beacon street, or on or within ninety-five feet of Beacon street between the Claflin building, so-called, and Park street, whose property is damaged more than it is benefited by the improvement of the State House, consisting of the limitation of the height of buildings on said land, the laying out and grading of said streets, the removal of buildings between Hancock street and Bowdoin street, the reconstruction and extension of the State House and the construction of the park between Bowdoin street and the State House, may, within two years after the passage of this act, and not afterward, file in the office of the clerk of the superior court for the county of Suffolk, his petition for a jury to determine such damage, and a jury of said court shall thereupon determine the question, under the rules of law, so far as they are applicable, under which damages for the laying out of highways under the Revised Laws are determined. If the jury find that the petitioner is damaged more than he is benefited by said

improvement they shall determine the amount of the difference, and the Commonwealth shall pay the same; and if the jury shall not so find, judgment shall be entered for the Commonwealth, costs taxed and execution issued therefor against the petitioner as in civil cases. The city of Boston shall repay to the Commonwealth all damages which the state shall be required to pay for the change of grade of Bowdoin street made under authority of the governor and council, and for all expenses incurred in making such change.

SECT. 3. Section two of chapter three hundred and eighty-two of the acts of the year nineteen hundred, as amended by section one of chapter five hundred and twenty-five of the acts of the year nineteen hundred and one, is hereby further amended by striking out all of said section two after the word "Commonwealth," in the seventeenth line, so as to read as follows: *Section 2.* The governor and council may lay out said land for use as a park, with driveways, walks, grass plots, curbing and railing; may close Mount Vernon street from Beacon street to the state house arch; may construct a new approach to the state house from Bowdoin street and from Beacon street; may build retaining walls and fences; may change the grade of Mount Vernon street from Joy street to the state house as they shall deem to be most advantageous for an approach to the state house; may change the grade of Bowdoin street from Beacon street to Ashburton place so that the street will be substantially level in that part, and may widen Bowdoin street at any part to a width not exceeding fifty feet; may grade and construct said streets and relay the sewers, pipes, tubes, conduits and wires therein wherever necessary, and may provide for the proper storage of coal for the use of the Commonwealth.

SECT. 4. Section three of said chapter five hundred and twenty-five is hereby repealed.

SECT. 5. This act shall take effect upon its passage.

[Approved June 28, 1902.]

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## CHAPTER 333, ACTS OF 1904.

### AN ACT RELATIVE TO THE HEIGHT OF BUILDINGS IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. The city of Boston shall be divided into districts of two classes, to be designated districts A and B. The boundaries of the said districts, established as hereinafter provided, shall continue for a period of fifteen years, and shall be determined in such manner that those parts of the city in which all or the greater part of the buildings situate therein are at the time of such determination used for business or commercial purposes shall be included in the district or districts designated A and those parts of the city in which all or the greater part of the buildings situate therein are at the said time used for residential purposes or for other purposes not business or commercial shall be in the district or districts designated B.

SECT. 2. Upon the passage of this act the mayor of the city shall appoint a commission of three members to be called "Commission on Height of Buildings in the City of Boston." The commission shall immediately upon its appointment give notice and public hearings, and shall make an order establishing the boundaries of the districts aforesaid, and, within one month after its appointment, shall cause the same to be recorded in the registry of deeds for the county of Suffolk. The boundaries so established shall continue for a period of fifteen years from the date of said recording. Any person who is aggrieved by the



said order may, within thirty days after the recording thereof, appeal to the commission for a revision; and the commission may, within six months after its appointment, revise such order, and the revision shall be recorded in the registry of deeds for the county of Suffolk, and shall date back to the original date of recording. The members of the commission shall serve until the districts have been established as aforesaid; and any vacancy in the commission caused by resignation, death or inability to act shall be filled by the mayor, on written application by the remaining members of the commission or of ten inhabitants of the city. The members of the commission shall receive such compensation as the mayor shall determine.

*Height Limit in District A and District B, Exceptions.*

SECT. 3. In the city of Boston no building shall be erected to a height of more than one hundred and twenty-five feet above the grade of the street in any district designated A, and no building shall be erected to a height of more than eighty feet above the grade of the street in any district designated B. These restrictions shall not apply to grain or coal elevators or sugar refineries in any district designated A, nor to steeples, domes, towers or cupolas erected for strictly ornamental purposes, of fireproof material, on buildings of the above height or less in any district. The supreme judicial court and the superior courts shall each have jurisdiction in equity to enforce the provisions of this act, and to restrain the violation thereof.

SECT. 4. This act shall take effect upon its passage.

*[Approved May 13, 1904.]*

[ORDER OF DECEMBER 3, 1904.]

June 7, 1904, the mayor of the city of Boston, under the provisions of chapter 333 of the Acts of 1904, ap-

pointed the Commission on Height of Buildings in the city of Boston, and they on July 5, 1904, made an order in accordance with the provisions of said chapter, which order is recorded in the Suffolk Registry of Deeds, Book 2976, page 45.

ORDER OF JULY 5, 1904, AS AMENDED AND REVISED BY  
ORDER OF DECEMBER 3, 1904.

*Boundaries of District A.*

A. The boundaries of the Districts A, hereby established, are as follows, to wit:

1. Beginning on the northerly side of that part of the said city known as East Boston at the Chelsea Street Bridge, thence running southeasterly, southerly and southwesterly through the centre of Chelsea street to Eagle square, thence westerly through said Eagle square and the centre of Eagle street to Glendon street, thence northerly through the centre of said Glendon street to Condor street, thence westerly through the centre of said Condor street to Border street, thence southerly and southwesterly through the centre of said Border street to Sumner street, thence southeasterly through the centre of said Sumner street to Orleans street, thence southwesterly through the centre of said Orleans street to Marginal street, thence southeasterly and easterly through the centre of said Marginal street to Jeffries street, thence northeasterly through the centre of said Jeffries street to Maverick street, thence northwesterly through the centre of said Maverick street to the location of the Boston, Revere Beach and Lynn Railroad, thence northerly and northeasterly along said Railroad to the property of the said city known as Wood Island Park, thence southeasterly along the line dividing the said property of the said city from the property of the East Boston Company and the property of the Commonwealth to the harbor;

thence southwesterly, westerly, northwesterly, northerly, northeasterly, and easterly along the said harbor and Chelsea Creek, around the said East Boston to the point of beginning at said Chelsea Street Bridge; meaning to include in the said District A all those portions of wards one and two of the said city, as now established by law, which are situated within the boundary line hereinbefore described.

2. Beginning on the southerly side of that part of the said city known as Charlestown at the Charlestown Bridge, thence running northwesterly through the centre of said bridge and the approaches thereof to a point on said approaches immediately over the centre of the arch connecting Warren avenue with Water street, thence northeasterly through the centre of said Water street to the property of the United States known as the United States Navy Yard, thence northwesterly along the southwesterly boundary line of said property of the United States to Chelsea street, thence northeasterly through the centre of said Chelsea street to Medford street, thence northwesterly and westerly through the centre of said Medford street to the junction of said Medford street, Bunker Hill street and Main street, thence northwesterly through the centre of said Main street to the property of the said city known as the Charlestown Playground, thence northeasterly along the southeasterly boundary of said Playground to the Mystic river, thence easterly, southeasterly, southerly and southwesterly along said Mystic river and the harbor around said Charlestown to the point of beginning at said Charlestown Bridge; meaning to include in the said District A all those portions of Wards three, four and five of the said city as now established by law, which are situated within the boundary line hereinbefore described.

3. Beginning on the easterly side of that part of the

said city known as the city proper at the Congress Street Bridge, thence running southeasterly across said bridge to that part of said city known as South Boston, thence northeasterly, easterly, southeasterly, westerly, southerly and easterly around the northerly part of said South Boston and the Reserved channel, so-called, to the point on the southerly boundary of said Reserved channel where Q street extended northerly would meet the said channel, thence southerly through the centre of said Q street to East First street, thence westerly through the centre of East First street to I street, thence southerly through the centre of said I street to East Second street, thence westerly through the centre of said East Second street to the junction of said East Second street, Dorchester street and West First street, thence northwesterly through the centre of said West First street to Dorchester avenue, thence southerly through the centre of said Dorchester avenue to Dexter street, thence westerly through the centre of said Dexter street to Ellery street, thence southerly through the centre of said Ellery street to Southampton street, thence westerly through the centre of said Southampton street to Massachusetts avenue, thence northwesterly through the centre of said Massachusetts avenue to Albany street, thence northeasterly through the centre of said Albany street to East Dedham street, thence northwesterly through the centre of said East Dedham street to Harrison avenue, thence northeasterly through the centre of said Harrison avenue to Troy street, thence southeasterly through the centre of said Troy street to Albany street, thence northerly through the centre of said Albany street to Broadway, thence northwesterly through the centre of said Broadway to Washington street, thence northwesterly across said Washington street and through the centre of Pleasant street to Piedmont street, thence westerly through the



centre of said Piedmont street, to Ferdinand street,\* thence northwesterly through the centre of said Ferdinand street to Columbus avenue, thence southwesterly through the centre of Columbus avenue to a point where a line passing along the boundary line between the estates now numbered 352 and 356 on Boylston street and extended southeasterly would meet said point on Columbus avenue, thence from said point northwesterly along said line and between said estates above mentioned to a point in the centre of Boylston street opposite or nearly opposite the westerly boundary of the lot on which the Arlington Street Church now stands, thence easterly through the centre of said Boylston street to Tremont street, thence northerly and northeasterly through the centre of said Tremont street to Park street, thence northwesterly through the centre of said Park street to Beacon street, thence northeasterly through the centre of said Beacon street to Bowdoin street, thence northerly through the centre of said Bowdoin street to Cambridge street, thence westerly through the centre of said Cambridge street to Staniford street, thence northerly through the centre of said Staniford street to Green street, thence northwesterly through the centre of said Green street to Leverett street, thence northwesterly through the centre of said Leverett street to the Charles river at Craigie Bridge, thence northeasterly, easterly, southeasterly, southerly and southwesterly by the said Charles river and the said harbor around the said city proper to the point of beginning at said Congress Street Bridge; meaning to include in said District A the whole of ward six and all those portions of wards seven, eight, nine, ten, eleven, twelve, thirteen, fourteen, fifteen and seventeen of the said city, as now established by law, which are situated within the boundary line hereinbefore described.

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\* Ferdinand street is now Arlington street.

*Boundaries of District B.*

B. The boundaries of the Districts B hereby established are as follows, to wit:

1. All those portions of said wards one and two which are situated outside the line beginning and ending at said Chelsea Street Bridge hereinbefore established as the boundary of one of said Districts A.

2. All those portions of said wards three, four and five which are situated outside the line beginning and ending at said Charlestown Bridge hereinbefore established as the boundary of one of said Districts A.

3. The whole of wards sixteen, eighteen, nineteen, twenty, twenty-one, twenty-two, twenty-three, twenty-four and twenty-five of the said city, as now established by law, and all those portions of said wards seven, eight, nine, ten, eleven, twelve, thirteen, fourteen, fifteen and seventeen which are situated outside the line beginning and ending at said Congress Street Bridge hereinbefore established as the boundary of one of said Districts A.

Meaning to include in the said Districts B all those portions of the said city not included in the Districts hereinbefore established as Districts A.

Wherever in this order the words "harbor," "river," "creek" are found, the same are intended to mean the furthest line towards deep water on said harbor, river or creek respectively on which the erection of wharves or other structures is permitted by the State and United States authorities.

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CHAPTER 383, STATUTE OF 1905.

AN ACT RELATIVE TO THE HEIGHT OF BUILDINGS IN THE  
CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. Within thirty days after the passage of this act the mayor of the city of Boston shall appoint a com-

mission of three members to determine, in accordance with the conditions hereinafter provided, the height of buildings within the district designated by the commission on height of buildings in the city of Boston as district B, in accordance with chapter three hundred and thirty-three of the acts of the year nineteen hundred and four.

SECT. 2. Said commission shall immediately upon its appointment give notice and public hearings, and shall make an order establishing the boundaries of or otherwise pointing out such parts, if any, of said district B, as it may designate in which buildings may be erected to a height exceeding eighty feet but not exceeding one hundred feet, and the height between eighty feet and one hundred feet to which buildings may so be erected, and the conditions under which buildings may be erected to said height except that such order may provide for the erection of buildings as aforesaid to a height not exceeding one hundred and twenty-five feet in that portion of said district B which lies within fifty feet from the boundary line separating said district B from the district designated by the commission on height of buildings in the city of Boston as district A in accordance with said chapter three hundred and thirty-three, provided said boundary line divides the premises affected by such order from other adjoining premises both owned by the same person or persons, and within sixty days after its appointment shall cause the same to be recorded in the registry of deeds for the county of Suffolk. Any person who is aggrieved by such order may, within sixty days after the recording thereof, appeal to the commission for a revision; and the commission may, previous to the first day of January in the year nineteen hundred and six, revise such order, and the revision shall be recorded in the registry of deeds for the county of Suffolk and shall date back to the original date of recording.

The boundaries so established shall continue for a period of fifteen years from the date of the recording of the order made by the commission on height of buildings in the city of Boston under chapter three hundred and thirty-three of the acts of the year nineteen hundred and four. The members of the commission shall receive such compensation as the mayor shall determine.

*Heights Limited to 125 Feet — 100 Feet — 70 Feet.*

SECT. 3. Within such parts of district B as may be designated by the commission as aforesaid (which may, except as hereinafter provided, include any parts of said district B affected by prior acts limiting the height of buildings) buildings may be erected to the height fixed by the commission as aforesaid, exceeding eighty feet but not exceeding one hundred feet, or one hundred and twenty-five feet as hereinbefore provided, and subject to such conditions as may be fixed as aforesaid by the commission; but within the following described territory, to wit:—Beginning at the corner of Beacon street and Hancock avenue, thence continuing westerly on Beacon street to Joy street, thence continuing northerly on Joy street to Myrtle street, thence continuing easterly on Myrtle street to Hancock street, thence continuing southerly on Hancock street and Hancock avenue to the point of beginning, no building shall be erected to a height greater than seventy feet, measured on its principal front, and no building shall be erected on a parkway, boulevard or public way on which a building line has been established by the board of park commissioners or by the board of street commissioners, acting under any general or special statute, to a greater height than that allowed by the order of said boards; and no building upon land any owner of which has received and retained compensation in damages



for any limitation of height or who retains any claim for such damages shall be erected to a height greater than that fixed by the limitation for which such damages were received or claimed.

*Height Unlimited.*

SECT. 4. No limitations of the height of buildings in the city of Boston shall apply to churches, steeples, towers, domes, cupolas, belfries or statuary not used for purposes of habitation, nor to chimneys, gas holders, coal or grain elevators, open balustrades, skylights, ventilators, flagstaffs, railings, weather vanes, soil pipes, steam exhausts, signs, roof houses not exceeding twelve feet square and twelve feet high, nor to other similar constructions such as are usually erected above the roof line of buildings.

*Roof Houses, Pent Houses and Bulkheads.*

Roof houses, pent houses, bulkheads and skylights above the roof line used to enclose elevator machinery or shafts may be more than twelve feet square, but shall not exceed in area the size of the shaft served thereby, except in the case of elevator shafts, which may be allowed an additional space of four feet on all sides. They shall not exceed twelve feet in height and shall not be used for any purpose except the storage of tools and appliances used for the maintenance of the elevators.

Roof houses, pent houses and bulkheads in first class buildings may be constructed of angle iron and four-inch blocks, plastered on the inside and outside, or covered inside and outside with metal covering or angle iron, and two-inch solid metal lath and plaster walls may be used, the door to be of metal frame covered with metal. For second and third class buildings, roof houses, pent houses, and bulkheads may be of wood frame covered with metal

on the outside and plastered on metal lathing on the inside; provided, that the door is covered with metal on both sides.

[1919, c. 156, Special Act, to take effect April 24, 1919.]

SECT. 5. This act shall take effect upon its passage.

[*Approved May 8, 1905.*]

[ORDER OF JULY 21, 1905.]

*Height Limit.—Street Exceeding Sixty-four Feet in Width.*

Buildings may be erected on streets exceeding sixty-four (64) feet in width, to a height equal to one and one quarter times the width of the street upon which the building stands; and, if situated on more than one street, the widest street is to be taken, the height to be measured from the mean grade of the curbs of all the streets upon which the building is situated, and not exceeding one hundred (100) feet in any event.

*Width of Streets.*

If the street is of uneven width, its width will be considered as the average width opposite the building to be erected.

The width of a street shall be held to include the width of any space on the same side of the street upon which a building stands, upon or within which space no building can be lawfully erected by virtue of any building line established by the Board of Street Commissioners or the Board of Park Commissioners acting under general or special laws.

All streets or portions of streets upon which buildings may be erected on one side only shall be considered as of a width of eighty (80) feet as to that portion upon which buildings may be erected on one side only.

In the case of irregular or triangular open spaces formed by the intersection of streets, the width of the street

shall be taken as the width of the widest street entering said space at the point of entrance.

*Parkway Restrictions.*

No building shall, however, be erected on a parkway, boulevard or public way on which a building line has been established by either of said Boards acting under general or special laws to a height greater than that allowed by said general or special laws, nor otherwise in violation of Section 3 of said Chap. 383, Acts of 1905.

*Height Limit — Eighty Feet Exceptions.*

No building shall be erected to a height greater than eighty (80) feet unless its width on each and every public street upon which it stands will be at least one half its height.

Nothing in this order shall be construed as affecting any condition or restriction imposed by deed, agreement or by operation of law on any property in said Districts B.

*Height Limit — One Hundred Twenty-five Feet —  
District B.*

The said Commissioner further provide that buildings may be erected to a height not exceeding one hundred and twenty-five (125) feet in that portion of the District B as established by the Commission on Height of Buildings in its order dated December 3, 1904, recorded with Suffolk Deeds, Book 3008, page 129, which lies fifty (50) feet westerly from the boundary line running from Columbus avenue to the centre of Boylston street, separating said District B from District A, as established by said order; *provided, however*, that said portion of District B is owned by the same person or persons who own the adjoining premises in District A.

[REVISED ORDER OF NOVEMBER 20, 1905.]

*Mechanic Arts High School.*

1. So long as the property owned by the city of Boston on Dalton, Belvidere and Scotia streets, bounded 205.5 feet on Dalton street, 250 feet on Belvidere street, and 184 feet on Scotia street, be said measurements more or less, shall be used for a Mechanic Arts High School, any building or buildings thereon may be erected to a height of one hundred (100) feet.

2. Add at the end of the third paragraph the words: "or by the Commonwealth or City," so that the concluding part of said paragraph shall read, "established by the Board of Street Commissioners or the Board of Park Commissioners acting under general or special laws or by the Commonwealth or City."

3. After the tenth word in the fourth paragraph insert the word "lawfully" so that said paragraph shall read: "All streets or portions of streets upon which buildings may lawfully be erected, etc."

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NOTE.—See chapter 333, Acts of 1915, Special Acts and Order following.

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CHAPTER 416, ACTS OF 1907.

AN ACT RELATIVE TO THE HEIGHT OF BUILDINGS ON RUTHERFORD AVENUE IN THE CITY OF BOSTON.

*Height Limit One Hundred Feet.*

SECTION 1. The width of Rutherford avenue in the Charlestown district of the city of Boston, between Chapman street and the Mystic river tracks of the Boston and Maine Railroad crossing the northerly part of said avenue, shall be considered as eighty feet in respect to the height of buildings that may be erected on the southwesterly and westerly side of said avenue, between the points mentioned,



so as to permit the erection of buildings to the height of one hundred feet, as provided for buildings erected on streets of the width aforesaid in district B by the commission appointed on height of buildings in the city of Boston, under chapter three hundred and eighty-three of the acts of the year nineteen hundred and five.

SECT 2. This act shall take effect upon its passage.

*[Approved May 16, 1907.]*

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## CHAPTER 463, ACTS OF 1907.

### AN ACT RELATIVE TO THE LICENSING OF THEATRES AND PUBLIC HALLS IN THE CITY OF BOSTON.

SECTION 1. In Boston the mayor shall be the officer to issue licenses for theatres and public halls, and he may require such changes in the structural condition of any building before issuing a license, as in his opinion, the public safety requires, but no changes shall be ordered in excess of the statutory requirements then in force for a new building of like character. Whoever is aggrieved by any order or decision of the mayor in respect to changes that he may require in the structural condition of any building before issuing a license as aforesaid shall have the right of appeal to the board of appeals established by chapter four hundred and nineteen of the acts of the year eighteen hundred and ninety-two, or to any similar or succeeding board of appeals which may hereafter be established for the city of Boston. Said board on receipt of the appeal shall within five days thereafter examine the premises and hear the parties and render a decision in writing within ten days after such hearing, and the majority of the board shall decide whether the whole or a part of the order or requirement made by the mayor in respect to structural changes shall be complied with, or

whether a license for said building shall be issued; and the mayor shall make his order or requirement in respect of structural changes and the issuing of said license conform to the decision of said board. If the mayor has granted a license as aforesaid he shall not revoke or suspend the same except by giving five days' written notice to the licensee of his intention so to do, and his reasons therefor, and if the licensee is aggrieved by said notice of revocation and said reasons he may appeal to the board of appeals, who shall within five days from date of his appeal examine the premises and hear the parties, and render a decision in writing within three days after such hearing; and the majority of the board shall decide whether the license shall be revoked, and the mayor shall make his action conform to the decision of the board and shall not revoke the same without the approval of the board.

SECT. 2. This act shall take effect upon its passage.

[Approved May 28, 1907.]

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## CHAPTER 284, ACTS OF 1910.

AN ACT RELATIVE TO THE CONSTRUCTION, ALTERATION,  
INSPECTION AND MAINTENANCE OF BUILDINGS IN  
THE CITY OF BOSTON.

*Building Department to Enforce Building Laws in Boston  
Heretofore Enforced by District Police.*

*Be it enacted, etc., as follows:*

SECTION 1. It shall be the duty of the building commissioner of the city of Boston to enforce all provisions of law relative to the construction, alteration, inspection and maintenance of buildings which are or may be applicable to said city, heretofore enforced by the district police, except the provisions of chapter four hundred and sixty-five of the acts of the year nineteen hundred and seven,

relative to the inspection of steam boilers, the provisions of chapter three hundred and seventy of the acts of the year nineteen hundred and four, as amended by chapter two hundred and eighty of the acts of the year nineteen hundred and five and by chapter five hundred and two of the acts of the year nineteen hundred and eight, relative to the keeping, storage, use, manufacture, sale, handling and transportation of explosive or inflammable fluids or compounds or other explosives, the provisions of chapter four hundred and thirty-three of the acts of the year nineteen hundred and four, relative to the powers and duties of the detective department of the district police in connection with the investigation or prevention of fires, and the provisions of chapter five hundred and fourteen of the acts of the year nineteen hundred and nine, and acts in amendment thereof or in addition thereto, relative to labor, so far as the provisions of said chapter are enforced by the district police.

SECT. 2. All acts and parts of acts inconsistent herewith are hereby repealed.

SECT. 3. This act shall take effect upon its passage.

[Approved March 25, 1910.]

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## CHAPTER 571, ACTS OF 1910.

AN ACT TO AUTHORIZE THE COLLECTION OF FEES FOR PERMITS AND LICENSES ISSUED BY DEPARTMENTS OF THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. The heads of the various departments of the city of Boston may establish, subject to the approval of the mayor, reasonable fees or charges for the issuance of permits and licenses by said departments: *provided, however,* that the charge for a permit to make excavations in any street or sidewalk shall not exceed fifty cents.

SECT. 2. The authority given in the preceding section shall not deprive any of the officials named in section twenty-eight of chapter four hundred and eighty-six of the acts of the year nineteen hundred and nine of any authority given therein to fix the charges for permits and licenses.

SECT. 3. This act shall take effect upon its passage.

[Approved May 26, 1910.]

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## CHAPTER 342, ACTS OF 1911.

### AN ACT TO REGULATE THE CONSTRUCTION OF GARAGES IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. A garage hereafter erected within the fire limits of the city of Boston shall be of first class construction. A garage *hereafter* erected in any other part of that city shall be either of first or second class construction.

SECT. 2. By the term "garage" is meant a building or that part of a building wherein are kept *five* or more automobiles or motor cars charged with or containing a volatile inflammable liquid for fuel or power. Wherever hereafter any part of an existing building is converted into a garage, the garage shall be deemed to embrace all the building not separated from the garage proper by fireproof construction satisfactory to the building commissioners, and such building or part of a building shall be of first class construction.

SECT. 3. By the term "volatile inflammable liquid" is meant any liquid that will emit inflammable vapor at a temperature below one hundred degrees Fahrenheit, when tested in the open air.

SECT. 4. The penalty for violation of this act shall be a fine of not less than ten and not more than fifty dollars a day, so long as the violation continues.

[Approved April 27, 1911.]



## CHAPTER 259, ACTS OF 1912.

AN ACT RELATIVE TO THE CONSTRUCTION OF GARAGES  
IN THE CITY OF BOSTON.

Existing buildings upon premises numbered 337 on Newbury street, in Boston, are exempt from the provisions of chapter 342, Acts of 1911, but only while such buildings remain of their present size and in their present location: *provided, however*, that no part of said buildings shall be used as a dwelling.

[*Approved March 18, 1912, and took effect upon its passage.*]

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## CHAPTER 280, ACTS OF 1913.

AN ACT TO AUTHORIZE THE MAYOR OF THE CITY OF  
BOSTON TO GRANT PERMITS FOR SPECIAL MOVING  
PICTURE EXHIBITIONS IN CHURCHES, HALLS OR  
OTHER BUILDINGS.

*Be it enacted, etc., as follows:*

SECTION 1. The mayor of the city of Boston may grant permits in writing for special exhibitions of moving pictures in churches, halls or other buildings in that city which, in his opinion, are in safe condition for said exhibitions, and he may prescribe regulations for the proper conduct of the same: *provided, however*, that such special exhibitions shall be subject to the laws of the commonwealth and the regulations of the district police relating to the use of the cinematograph or similar apparatus.

SECT. 2. A fee of two dollars shall accompany each application for a permit hereunder.

SECT. 3. This act shall take effect upon its passage.

[*Approved March 12, 1913.*]

CHAPTER 577, ACTS OF 1913.

AN ACT TO REGULATE THE ERECTION AND MAINTENANCE  
OF GARAGES IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. In the city of Boston no building shall be erected for, or maintained as a garage for the storage, keeping or care of automobiles until the issue of a permit therefor by the board of street commissioners of the city after notice and a public hearing upon an application filed with said board. The application for the permit shall be made by the owner of the parcel of land upon which such building is to be erected or maintained and shall contain the names and addresses of every owner of record of such parcel of land abutting thereon.

[1914, c. 119, Sect. 1.]

SECT. 2. The notice required by the preceding section shall include a copy of the application and an order of said board specifying the time and place of the public hearing, and shall be given by publication once in each week for three successive weeks in some one newspaper regularly published in said city, and by mailing by prepaid registered mail a copy to every owner of record of each parcel of land abutting on the parcel of land on which the building proposed to be erected for, or maintained as a garage is to be, or is situated, and the cost of such notice and proceedings shall be borne by the applicant.

SECT. 3. At the time and place specified in the notice for the hearing the said board shall hear all parties interested, and after giving consideration to the interests of all owners of record notified, and the general character of the neighborhood in which is situated the land or building referred to in the application, shall determine whether or not the application shall be granted and a permit issued.

[1914, c. 119, Sect. 2.]

SECT. 4. The provisions of this act shall not apply to a building maintained as a garage for the storage, keeping or care of automobiles at the time of the passage of this act, but any enlargement of, or addition to any such building shall be subject to the provisions of this act.

[1914, c. 119, Sect. 3.]

SECT. 5. Whoever erects or maintains a garage in violation of this act shall be subject to a fine of not less than ten nor more than fifty dollars for every day during which such violation continues.

*Approved May 2, 1913.*

[1912, c. 259; 1914, c. 119.]

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## CHAPTER 729, ACTS OF 1913.

### AN ACT RELATIVE TO DRY HOUSES IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. No building or part of a building hereafter erected or altered in the city of Boston shall be used for kiln drying timber unless such building or part of a building is of fireproof construction approved by the building commissioner.

SECT. 2. All acts and parts of acts inconsistent herewith are hereby repealed.

SECT. 3. This act shall take effect upon its passage.

*[Approved May 29, 1913.]*

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## CHAPTER 782, ACTS OF 1914.

### AN ACT TO AMEND THE BUILDING LAW OF THE CITY OF BOSTON.

*Elevators and Shafts.*

SECTION 6. Elevators hereafter installed shall be provided with such shaftway enclosures and doors as may be required by the regulations of the Massachusetts board

of elevator regulations. All shafts for light and ventilation and skylights over such shafts shall be constructed of like materials and in a like manner as required for elevator shafts, and all window openings in the same, except in exterior walls, shall be protected by metal frames and sash and wired glass.

SECT. 11. The provisions of this act, so far as they are the same as those of existing statutes, shall be construed as continuations thereof and not as new enactments.

SECT. 12. All acts and parts of acts inconsistent herewith are hereby repealed, but nothing herein contained shall be construed to modify the powers and duties conferred and imposed upon the board of appeals by sections six, seven and eight of chapter five hundred and fifty of the acts of the year nineteen hundred and seven.

SECT. 13. This act shall take effect ninety days after its passage.

[Approved July 7, 1914.]

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## CHAPTER 786, ACTS OF 1914.

### AN ACT EXEMPTING A CERTAIN PARCEL OF LAND IN THE CITY OF BOSTON FROM RESTRICTIONS AS TO THE HEIGHT OF BUILDINGS.

*Be it enacted, etc., as follows:*

SECTION 1. The parcel of land situated in the city of Boston bounded by Washington street, Lovering place, Harrison avenue and Asylum street is hereby exempted from the provisions of chapter three hundred and thirty-three of the acts of the year nineteen hundred and four and chapter three hundred and eighty-three of the acts of the year nineteen hundred and five, relative to the height of buildings, and is relieved from the restrictions as to height placed thereon by the commissioners on the height of buildings in the city of Boston acting under the



authority of said statutes: *provided, however*, that nothing herein shall authorize the erection on said parcel of a building exceeding one hundred and twenty-five feet in height above the grade of the sidewalk on Washington street in front of said parcel, nor the erection of any building thereon except in accordance with a permit duly granted therefor by the building commissioner of the city of Boston.

SECT. 2. This act shall take effect upon its passage.

[Approved July 7, 1914.]

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## CHAPTER 254, ACTS OF 1915 (SPECIAL ACT).

### AN ACT RELATIVE TO THE ERECTION OF BUILDINGS IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. If any building erected in the city of Boston since the first day of August in the year nineteen hundred and seven, under a permit granted by the building commissioner or issued by direction of the board of appeal, appears to have been erected contrary to the law, existing at the time of its erection, such building shall be considered as having been erected in conformity with law, and the building commissioner and the mayor shall issue the permits necessary to make lawful the use of said building for the purpose for which it was erected; *provided*, that an application for the authorization of such use be filed with the building commissioner within six months of the passage of this act; and *provided, also*, that it shall appear to said commissioner, or, upon appeal from his ruling, to a majority of the board of appeal:—

First. That said building was erected in accordance with the plans approved by the building commissioner or the board of appeal.

Second. That said building was erected in good faith with the intention of complying with the law.

Third. That the use of said building for the purpose for which it was erected would not, under all the circumstances of the case, injuriously affect public interests.

SECT. 2. The provisions of section one of this act, and any authority granted thereunder, shall not relieve the owner of any building of the duty of complying with the provisions of any law passed subsequent to the time of the erection of such building, or with the terms of any order, rule or regulation made or established under authority of such law.

SECT. 3. This act shall take effect upon its passage.

*(The foregoing was laid before the Governor on the twenty-ninth day of March, 1915, and after five days it had "the force of a law," as prescribed by the Constitution, as it was not returned by him with his objections thereto within that time.)*

*[Took effect April 3, 1915.]*

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## CHAPTER 306, ACTS OF 1915 (SPECIAL ACT).

### AN ACT RELATIVE TO THE SHIRLEY-EUSTIS MANSION ON SHIRLEY STREET IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. The provisions of chapter five hundred and fifty of the acts of the year nineteen hundred and seven relative to the construction, alteration and maintenance of buildings in the city of Boston shall not, prior to the first day of January in the year nineteen hundred and eighteen, apply to the Shirley-Eustis mansion, so-called, situated on Shirley street in the city of Boston and formerly occupied by a colonial governor and by a governor of the commonwealth: *provided*, that, in the meantime, the house shall not be used as a dwelling house or for any

other purpose except to provide for its preservation and restoration as an example of a colonial executive mansion; and *provided*, that it shall be occupied only by a caretaker and his assistants.

SECT 2. This act shall take effect upon its passage.

[*Approved April 27, 1915.*]

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## CHAPTER 333, ACTS OF 1915 (SPECIAL ACT).

### AN ACT RELATIVE TO THE HEIGHT OF BUILDINGS IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. The chairman of the city planning board, the fire commissioner and the building commissioner of the city of Boston are hereby created a commissioner to determine and revise the boundaries of districts A and B as heretofore designated by the commission on height of buildings in the city of Boston, in accordance with the provisions of chapter three hundred and thirty-three of the acts of the year nineteen hundred and four, in the orders of said commission dated, respectively, the fifth day of July and the third day of December in the year nineteen hundred and four, and recorded, respectively, with Suffolk deeds in book twenty-nine hundred and seventy-six, page forty-five, and in book three thousand and eight, page one hundred and twenty-nine.

The height to which buildings may be erected in Districts A and B, respectively, as revised and established under this act, shall not exceed the height authorized for buildings in districts designated as A and B, respectively, under the provisions of said chapter three hundred and thirty-three and of chapter three hundred and eighty-three of the acts of the year nineteen hundred and five, and the orders of the commission on height of buildings

in the city of Boston under authority of said chapter three hundred and eighty-three recorded, respectively, within Suffolk deeds in book three thousand and fifty-nine, page four hundred and seventy-seven, and in book three thousand and eighty-three, page seventy-four.

SECT. 2. The commission shall give notice and public hearings and shall make an order revising the boundaries of the districts aforesaid, and shall cause the same to be recorded in the registry of deeds for the county of Suffolk. The boundaries so established shall continue for a period of ten years from the date of said recording. Any person who is aggrieved by said order may appeal to the commission for revision within sixty days after the recording thereof; and the commission may revise the order and the revision shall be recorded in the registry of deeds for the county of Suffolk and shall date back to the original date of recording.

SECT. 3. Upon the recording of the order of revision under this act so much of section two of said chapter three hundred and thirty-three as continues the boundaries for districts A and B for a period of fifteen years from the date of the recording of the order of the commission under authority of said chapter three hundred and thirty-three shall become inoperative.

SECT. 4. This act shall take effect upon its passage.

*[Approved May 11, 1915.]*

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#### COMMISSION ON HEIGHT OF BUILDINGS IN THE CITY OF BOSTON.

*[Order of November 2, 1916.]*

The undersigned having been created under the provisions of chapter three hundred and thirty-three of the special acts of the year 1915 a commission to determine and revise the boundaries of Districts A and B as hereto-



fore designated by the commission on height of buildings in the city of Boston, in accordance with the provisions of chapter three hundred and thirty-three of the acts of the year 1904, in the orders of said commission dated, respectively, the fifth day of July and the third day of December in the year 1904, and recorded, respectively, with Suffolk Deeds in book twenty-nine hundred and seventy-six, page forty-five, and in book three thousand and eight, page one hundred and twenty-nine, and having given notice and public hearings as provided in said act, hereby on this second day of November, 1916, make the following order establishing the boundaries of the districts in said city, designated in said acts as Districts A and B, to wit:

A. The boundaries of District A, hereby established, are as follows, to wit:

*Boundaries of District A. East Boston.*

1. Beginning on the northerly side of that part of the city known as East Boston at the intersection of Wauwatosa street and Chelsea Creek, thence running easterly through Wauwatosa street and Boardman street to Saratoga street, thence southwesterly through Saratoga street to Addison street, thence westerly through Addison street to the Boston and Maine Railroad, thence southwesterly along the Boston and Maine Railroad and the Boston and Albany Railroad to Saratoga street, thence southwesterly through Saratoga street to Neptune road, thence northwesterly through Eagle square to Eagle street, thence westerly through Eagle street to Glendon street, thence northerly through Glendon street to Condor street, thence westerly through Condor street to Meridian street, thence southerly through Meridian street to Gove street, thence southeasterly through Gove street to Orleans street, thence southerly through Orleans street to Marginal

street, thence southeasterly through Marginal street to Jeffries street, thence northeasterly through Jeffries street to Maverick street, thence northwesterly through Maverick street to the Boston, Revere Beach and Lynn Railroad, thence northeasterly along said railroad to the centre of Porter street extended, thence northwesterly along Porter street to Bremen street, thence northerly along Bremen street to Prescott street, thence southeasterly along Prescott street to the Boston, Revere Beach and Lynn Railroad, thence northerly along said railroad to the northerly boundary of the property of the city of Boston known as Wood Island Park, thence easterly along said boundary to the harbor line, thence easterly, southerly, westerly, northerly, easterly, and northeasterly along said harbor line of Boston Harbor and Chelsea Creek to the point of beginning, meaning to include in said District A all those portions of Ward one and two of said city as are now established by law which are situated within the boundary lines hereinbefore described.

*Charlestown.*

2. Beginning at the northerly side of that part of said city known as Charlestown at the Malden Bridge, thence running southerly through Alford street to Sullivan square, thence southeasterly through Sullivan square and Bunker Hill street to Medford street, thence easterly through Medford street to Chelsea street, thence southerly through Chelsea street to Henley street, thence westerly through Henley street to Harvard square, thence southwesterly through Harvard square to Harvard street, thence northwesterly across Harvard street to Washington street, thence westerly through Washington street to Rutherford avenue, thence northwesterly through Rutherford avenue to Sullivan square, thence southwestwesterly through Cambridge street to the city line, thence southerly

and easterly along the city line and the Charles river channel to the Charlestown Bridge, thence northerly, easterly, northerly, and westerly along the harbor line of Boston Harbor and the Mystic river to the point of beginning; meaning to include in said District A all those portions of wards three and four of said city as are now established by law which are situated within the boundary lines hereinbefore described.

*Boston Proper. Roxbury. Dorchester. South Boston.*

3. Beginning on the northwesterly side of that part of said city known as the City Proper, at the intersection of the city line with the Charles river dam, thence easterly and southerly along said Charles river dam and Leverett street to Green street, thence easterly along Green street to Staniford street, thence southerly along Staniford street to Cambridge street, thence easterly along Cambridge street to Bowdoin street, thence southerly along Bowdoin street to Beacon street, thence southwesterly along Beacon street to Park street, thence easterly and southerly along Park and Tremont streets to Boylston street, thence westerly and southwesterly along Boylston street to Massachusetts avenue, thence southeasterly along Massachusetts avenue to the Providence Division of the New York, New Haven and Hartford Railroad, thence southwesterly along said railroad to Tremont street at Roxbury Crossing, thence southerly through Columbus avenue to Roxbury street, thence easterly through Roxbury street to Guild row, thence southerly through Guild row to Dudley street, thence easterly and southeasterly through Dudley street to Columbia road, thence northeasterly through Columbia road to Dorchester avenue, thence southerly through Dorchester avenue to Park street, thence northeasterly

through Park street to Adams street, thence southerly through Adams street to Neponset avenue, thence southeasterly through Neponset avenue to the Milton Branch of the New York, New Haven and Hartford Railroad, thence southwesterly along said railroad to Granite avenue, thence southeasterly along Granite avenue to the Neponset river, thence easterly and northerly along the shore of the Neponset river to the Neponset Bridge, thence northerly and westerly along the harbor lines of the Neponset river, Dorchester Bay and Old Harbor to the northwest angle of said harbor line of Old Harbor, thence northwesterly to the intersection of Old Colony avenue and Columbia road, thence northerly along Old Colony avenue to E street, thence northeasterly along E street to Broadway, thence southeasterly along Broadway to Dorchester street, thence northeasterly through Dorchester street to East Second street, thence easterly on East Second street to I street, thence northerly through I street to East First street, thence easterly through East First street to Farragut road, thence northerly through Farragut road and Farragut road extended across the Reserved channel, thence easterly, northwesterly and southwesterly, along the harbor line of said channel and of Boston Harbor to the Northern Avenue Bridge, thence westerly along said bridge to the Harbor Line, thence northerly and westerly along the Harbor Line of Boston Harbor and the Charles river to Charlestown Bridge, thence westerly along the Charles river channel and the City Line to the point of beginning, meaning to include in said District A all of ward six and all those portions of wards five, seven, eight, nine, eleven, twelve, thirteen, seventeen, eighteen, and twenty of the said city as are now established by law which are situated within the boundary lines hereinbefore described.



B. The boundaries of District B hereby established are as follows, to wit:

*Boundaries of District B.*

1. All those portions of said wards one and two situated outside the line beginning and ending at the intersection of Wauwatosa street and Chelsea creek hereinbefore established as the boundary of one of the said Districts A.

2. All those portions of said wards three and four situated outside the line beginning and ending at the said Malden Bridge, hereinbefore established as the boundary of one of the said Districts A.

3. The whole of wards ten, fourteen, fifteen, sixteen, nineteen, twenty-one, twenty-two, twenty-three, twenty-four, twenty-five and twenty-six and all those portions of said wards five, seven, eight, nine, eleven, twelve, thirteen, seventeen, eighteen and twenty situated outside the line beginning and ending at said intersection of the city line with the Charles river dam, hereinbefore established as the boundary of one of the said Districts A.

Meaning to include in the said Districts B all those portions of the said city not included in the districts hereinbefore established as Districts A.

Wherever in this order the words "harbor," "river," "creek," "shore line" or "harbor line," are found, the same are intended to mean the lines furthest towards deep water on said harbor, river or creek, respectively, on which the erection of wharves or other structures is permitted by the state and United States authorities.

Wherever the boundary line of District A is described as following a certain street, the same is intended to include all property on that side of the street which lies within the described area and also that portion of all lots on the opposite side of the street, abutting on the

street, but extending to a depth of not more than one hundred and fifty feet.

Wherever the boundary line of District B is determined by the enumeration of certain streets delimiting District A, the same is intended to include all property on that side of the street within the described area, except that portion of those lots abutting on the boundary streets of District A but extending to a depth of not more than one hundred and fifty feet, which are described in the paragraph above as intended to form a part of District A.

In witness whereof, the undersigned hereto set their hands this second day of November, 1916.

RALPH A. CRAM,  
JOHN GRADY,  
PATRICK O'HEARN,  
*Commission on Height of Buildings  
in the City of Boston.*

BOSTON, November 2, 1916.

Then personally appeared the above named Ralph A. Cram, John Grady and Patrick O'Hearn and acknowledged the foregoing instrument to be their free act and deed.

Before me,

ELISABETH M. HERLIHY,  
*Special Commissioner.*

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ORDER OF COMMISSION ON HEIGHT OF BUILDINGS IN THE  
CITY OF BOSTON AMENDING BOUNDARIES ESTAB-  
LISHED NOVEMBER 2, 1916.

[*Order of January 12, 1917.*]

*Whereas*, The undersigned, the Commission on Height of Buildings in the City of Boston, created by chapter 333 of the Special Acts of the year 1915, a commission to determine and revise the boundaries of Districts A and B in said city, which were established in pursuance

of the provisions of chapter 333 of the Acts of the year 1904, did on November 2, 1916, make an order in accordance with the provisions of said chapter 333 of the Special Acts of the year 1915, which order is recorded with Suffolk Deeds, Book 3993, page 81; and

*Whereas*, Certain parties are aggrieved by said order of November 2, 1916, and have in pursuance of the provisions of said chapter 333 of the Special Acts of the year 1915 duly filed petitions for the revision of said order;

*Now, therefore*, We the undersigned, having considered the matters set forth in said petitions, do hereby revise said order of November 2, 1916, in the manner following:

By excluding from District A as described in clause three of said order of November 2, 1916, and including in District B as described therein, the tract of land described as follows:

Beginning at a point on Boylston street at the division line between the Hotel Brunswick and the estate numbered 504 Boylston street; thence running southerly by said dividing line to Providence street; thence running westerly along Providence street to the dividing line between the estates now numbered 91 and 93 St. James avenue extended northerly; thence running southerly by said dividing line to St. James avenue; thence running westerly along St. James avenue crossing Dartmouth street and Huntington avenue and continuing westerly along Blagden street to the easterly line of the property of the Boston Athletic Association; thence running northerly by said last mentioned line and by said line extended parallel with Exeter street northerly to Boylston street; thence running easterly along Boylston street to the point of beginning.

The above described area shall be included wholly within District B and no part of said area shall be included in District A by reason of the following provision in said order of November 2, 1916:

"Wherever the boundary line of District A is described as following a certain street, the same is intended to include all property on that side of the street which lies within the described area, and also that portion of all lots on the opposite side of the street, abutting on the street, but extending to a depth of not more than one hundred and fifty feet.

"Wherever the boundary line of District B is determined by the enumeration of certain streets delimiting District A, the same is intended to include all property on that side of the street within the described area, except that portion of those lots abutting on the boundary streets of District A, but extending to a depth of not more than one hundred and fifty feet, which are described in the paragraph above as intended to form a part of District A."

This revision shall not be construed or applied so as to prevent owners of land on the northerly side of Boylston street along the area excluded from District A as above described from erecting buildings to a height permitted under the original order of November 2, 1916.

In witness thereof, the undersigned hereto set their hands this twelfth day of January, 1917.

RALPH A. CRAM,

JOHN GRADY,

PATRICK O'HEARN,

*Commission on Height of Buildings  
in the City of Boston.*

BOSTON, January 12, 1917.

Then personally appeared the above named Ralph A. Cram, John Grady and Patrick O'Hearn, and acknowledged the foregoing instrument to be their free act and deed.

ELISABETH M. HERLIHY,  
*Special Commissioner.*



## CHAPTER 86, ACTS OF 1916 (SPECIAL ACT).

AN ACT RELATIVE TO THE USE OF PUBLIC SCHOOL PROPERTY OF THE CITY OF BOSTON FOR SOCIAL, CIVIC AND OTHER PURPOSES.

*Be it enacted, etc., as follows:*

SECTION 1. Section one of chapter one hundred and ninety-five of the acts of the year nineteen hundred and twelve, is hereby amended by striking out the words "that no admission fee is charged and," in the tenth line so as to read as follows:—*Section 1.* For the purpose of promoting the usefulness of the public school property of the city of Boston, the school committee of that city may conduct such educational and recreative activities in or upon school property under its control, and shall allow the use thereof by individuals and associations, subject to such regulations as the school committee may establish, for such educational, recreative, social, civic, philanthropic and similar purposes as the committee may deem to be for the interest of the community: *provided*, that such use shall not interfere or be inconsistent with the use of the premises for school purposes.

SECT. 2. This act shall take effect upon its passage.

[*Approved February 16, 1916.*]

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## CHAPTER 115, ACTS OF 1918 (SPECIAL ACT).

AN ACT TO ALLOW METAL GARAGES OF LIMITED SIZE IN CERTAIN SECTIONS OF THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. Metal covered steel frame garages adapted for the accommodation of not more than two automobiles, constructed with concrete floors, with fireproof doors, windows, and trim, and not exceeding five hundred square feet in area, may be built outside the building limits of the city of Boston as such limits existed prior to the twenty-

second day of September in the year nineteen hundred and thirteen, provided that such garages are not built nearer than five feet from the lot line, or nearer than twelve feet from any other building.

SECT. 2. This act shall take effect upon its passage.

[Approved April 2, 1918.]

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## CHAPTER 32, ACTS OF 1919 (SPECIAL ACT).

### AN ACT TO REQUIRE THE REGISTRATION OF HOSPITALS IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. Every person, firm or corporation, using or occupying a building in the city of Boston as a hospital, shall annually in April register with the building department of the city the name of the person, firm or corporation conducting the hospital and the situation of the building, and shall state, upon forms prescribed by the building commissioner, the number of occupants, the means of egress, the system of automatic sprinklers, the lights, fire stops and other precautions against fire provided in such building.

SECT. 2. Violation of this act shall be punished by a fine not exceeding five hundred dollars.

[Approved February 19, 1919.]

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## CHAPTER 163, ACTS OF 1919 (SPECIAL ACT).

### AN ACT RELATIVE TO THE CONSTRUCTION, ALTERATION AND MAINTENANCE OF HOSPITALS IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

#### *First Class.*

SECTION 1. Every building in the city of Boston exceeding three stories or forty feet in height hereafter

erected, altered or designed for use or occupation as a hospital shall be a first class building as defined in chapter five hundred and fifty of the acts of nineteen hundred and seven and the amendments thereof. Every such building shall be provided with at least two enclosed stairways, shall have an additional enclosed stairway if the number of occupants, at any time, equals seventy-five, and a further additional enclosed stairway for every additional one hundred occupants which it may at any time contain.

*Second or Third Class.*

Every building in the city of Boston three stories or less in height, or less than forty feet in height, hereafter erected, altered or designed for use or occupation as a hospital may be of second or third class construction, shall have means of egress satisfactory to the building commissioner, and no story or part of a story above the second shall be used for the care, treatment or lodging of patients.

*Shafts, to be Sprinklered.*

SECT. 2. The elevator, light and ventilating shafts and basements in all hospital buildings specified in section one, shall be provided with a system of automatic sprinklers approved as to location, arrangement and efficiency by the building commissioner.

*Halls and Stairs to be Kept Lighted.*

SECT. 3. The halls and stairs in all hospital buildings specified in section one, shall be provided with proper and sufficient lights which shall be kept lighted during the night.

*Shafts to be Enclosed in Basement.*

SECT. 4. The elevator, light and ventilating shafts in all hospital buildings specified in section one, shall be

enclosed in the basement with masonry walls not less than eight inches thick or with two-inch metal and plaster partitions.

SECT. 5. In case of an existing or impending epidemic of a disease, the building commissioner, upon the recommendation of the health commissioner and with the written approval of the mayor, may temporarily suspend the provisions of this act.

SECT. 6. The health commissioner and the building commissioner, acting jointly, are hereby authorized to promulgate, from time to time, such regulations as in their judgment, public interests require, to govern the establishment and maintenance of hospitals whether for human beings or for domestic animals, and to regulate the issue, suspension and revocation of licenses for the same.

*Registration Required.*

SECT. 7. Every person, firm or corporation hereafter using or occupying a building in the city of Boston as a hospital shall forthwith register with the building department in the manner required by chapter thirty-two of the Special Acts of nineteen hundred and nineteen, setting forth all the facts and data therein specified.

SECT. 8. Violation of this act shall be punished by a fine not exceeding five hundred dollars.

*[Approved April 30, 1919.]*

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CHAPTER 455, ACTS OF 1920.

AN ACT RELATIVE TO THE LIMITATION IN HEIGHT OF BUILDINGS ON LAND BETWEEN DARTMOUTH STREET AND TRINITY PLACE IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. The limitation of the height of buildings contained in chapter four hundred and fifty-two of the



acts of eighteen hundred and ninety-eight shall not apply to a parcel of land now owned by the trustees of the Copley Square Trust, containing about twenty-one thousand, two hundred and forty square feet, and bounded southerly on Stuart street two hundred and thirty-six feet, westerly on Dartmouth street ninety feet, northerly on other land of said trustees on which now stands the Copley Plaza Hotel two hundred and thirty-six feet, and easterly on Trinity place ninety feet. If, within two years from the passage of this act, said parcel of land or any part or parts thereof are taken by public authority for any public use, the owner or owners of the land so taken shall, with respect to the land taken and apart from improvements thereon, only be entitled to recover damages to the extent that they would have been entitled to recover if this act had not been passed.

SECT. 2. This act shall take effect upon its passage.

[Approved May 14, 1920.]

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## CHAPTER 645, ACTS OF 1920.

### AN ACT RELATIVE TO AUTOMATIC SPRINKLERS IN TENEMENT HOUSES IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. The provisions of the fourth, fifth and sixth paragraphs of section forty-five of chapter five hundred and fifty of the acts of nineteen hundred and seven, as amended by section ten of chapter seven hundred and eighty-two of the acts of nineteen hundred and fourteen, and by section four of chapter three hundred and fifty-two of the Special Acts of nineteen hundred and fifteen, and by section one of chapter four hundred and forty of the acts of nineteen hundred and twenty, are hereby suspended and rendered inoperative as to tenement houses now exist-

ing until the first day of March in the year nineteen hundred and twenty-one.

SECT. 2. This act shall take effect upon its acceptance by the mayor of the city of Boston; but for the purposes of such acceptance it shall take effect upon its passage.

[Approved December 22, 1920.]

## CHAPTER 109, ACTS OF 1921.

AN ACT EXEMPTING CERTAIN BUILDINGS IN THE CITY OF BOSTON FROM THE LAWS RELATIVE TO FIRE PROTECTION IN STABLES FOR HORSES AND MULES.

*Be it enacted, etc., as follows:*

The existing buildings upon premises numbered forty-nine on North Margin street, in Boston, shall be exempt from the provisions of section eighty-six of chapter two hundred and seventy-two of the General Laws; provided that such buildings continue to be equipped with a line of fire hose on each floor above the first, to be used for fire purposes only, sufficient to reach all parts of said floor and connected with a fire supply pipe on each such floor, and provided that at least one man shall be on duty at such buildings at all times during the day and night.

[Approved March 12, 1921.]

## CHAPTER 137, ACTS OF 1921.

AN ACT TO ESTABLISH HARBOR LINES IN SOUTH BAY IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

### *Harbor Lines.*

SECTION 1. The harbor lines in South bay in the city of Boston are hereby changed and established as follows:

Beginning at a point A on the southerly side of Dover street bridge, which point is distant one hundred and eighty-three feet southeasterly from the southeasterly side line of Albany street; thence running southwesterly, parallel with said side line, nine hundred feet, to point B; thence running southwesterly, a little more westerly, about five hundred and fifty-five feet to a point C which is distant three hundred and seventy feet southeasterly from the northwesterly side line of Albany street, measuring at right angles to said side line from a point therein six hundred and twenty-seven feet northeasterly from the northeasterly side line of Wareham street; thence running southwesterly still more westerly, about sixteen hundred and fifteen feet, to a point D which is distant three hundred and fifty-three feet southeasterly from said northwesterly side line of Albany street, measuring at right angles to said side line from the point of its intersection with the southwesterly side line of East Brookline street; thence running southwesterly, still more westerly, five hundred feet, to a point E which is distant three hundred and forty feet southeasterly from said northwesterly side line of Albany street, measuring at right angles thereto; thence running southeasterly one hundred feet at right angles to the harbor line last described to a point F; thence running northeasterly, about four hundred and thirty-five feet, to a point G which is distant four hundred and fifty-five feet southeasterly from said northwesterly side line of Albany street, measuring at right angles to said side line from a point therein sixty-five feet southwesterly from the southwesterly side line of East Brookline street; thence running southeasterly, parallel with the northerly side line of Southampton street, six hundred and eighty feet to a point H; thence deflecting to the left one hundred degrees, six minutes and running northwesterly about seven hundred and five feet to a point J which is distant two hundred

and ten feet southeasterly from the line C-D, measuring at right angles thereto; thence running northeasterly parallel to said line C-D, eight hundred and twenty-nine feet to a point K; thence running northeasterly more northerly parallel to and two hundred and ten feet distant southeasterly from the line B-C about one thousand and ten feet to point L which is situated at the intersection of said line K-L, and a line perpendicular to the southerly side line of Dover street bridge and forty feet northwesterly from the center of pier number four of said Dover street bridge, said line also being about eighty-five feet southeasterly from the southeasterly side of the draw opening in said bridge; thence northeasterly more northerly in said line forty feet northwesterly of said pier number four about nine hundred and twenty-seven feet to its intersection with the harbor line on the easterly side of Fort Point channel and northerly of Dover street bridge established by chapter thirty-five of the acts of eighteen hundred and forty.

*No Wharf or Structure to be Built or Extended Beyond Harbor Lines.*

SECT. 2. No wharf, pier, wall, filling or other structure of work, shall hereafter be built or extended in said South bay beyond the harbor lines aforesaid; nor shall any structure be built or filling done inside said harbor lines and below the present high water mark in said bay, without authority or license therefor first duly obtained under and subject to the provisions of chapter ninety-one of the General Laws.

*No Work Allowed Below High Water Mark.*

SECT. 3. No structure shall be built or filling or other work done in any portion of said South bay below the present high water mark thereof, whereby the existing



flow or drainage of surface or other waters in or into and through said bay towards the sea is cut off or obstructed, without first making such other provision for such flow or drainage as shall be approved by the department of public works of both the commonwealth and the city of Boston.

SECT. 4. All harbor lines heretofore established in South bay, so far as they differ from those established by this act, are hereby annulled.

[Approved March 23, 1921.]

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## CHAPTER 298, ACTS OF 1921.

### AN ACT RELATIVE TO THE OPERATION OF ELEVATORS BY MINORS.

*Be it enacted, etc., as follows:*

SECTION 1. No minor under sixteen years of age shall be employed or permitted to operate, clean or repair a freight elevator.

SECT. 2. Violations of the provisions of this act shall be punished by a fine of not more than one hundred dollars.

[Approved April 9, 1921.]

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## DEFINITION.

### STATUTES. MEANING OF CERTAIN WORDS IN CONSTRUING SAME.

[General Laws, Chapter 4, Section 7.]

Thirty-fourth, "Town," when applied to towns or officers or employees thereof, shall include city.

[G. S. 3, Sect. 7, cl. 17; 140 Mass. 381; 187 Mass. 150; P. S. 3, Sect. 3, cl. 23; 148 Mass. 148; 191 Mass. 78; R. L. 8, Sect. 5, cl. 23; 153 Mass. 40; R. S. 2, Sect. 6, cl. 17.]

## SPITE FENCES.

### *Fence a Nuisance.*

[General Laws, Chapter 49, Section 21.]

SECTION 21. A fence or other structure in the nature of a fence which unnecessarily exceeds six feet in height and is maliciously erected or maintained for the purpose of annoying the owners or occupants of adjoining property shall be deemed a private nuisance. Any such owner or occupant injured in the comfort or enjoyment of his estate thereby may have an action of tort for damages under chapter two hundred and forty-three.

[1887, c. 348; R. L. 33, Sect. 19; 148 Mass. 368, 407; 150 Mass. 482; 162 Mass. 543.]

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## BUILDING LINES.

[GENERAL LAWS, CHAPTER 82, SECTION 37.]

SECTION 37. If a city by its city council or a town accepts this section or has accepted corresponding provisions of earlier laws, a building line not more than forty feet distant from the exterior line of a highway or town way may be established in the manner provided for laying out ways, and thereafter no structure shall be erected or maintained between such building line and such way, except steps, windows, porticos and other usual projections appurtenant to the front wall of a building, to the extent prescribed in the vote establishing such building line, and except that buildings or parts of buildings, embankments, steps, walls, fences and gates existing at the time of the establishment of the building line may be permitted to remain and to be maintained to such extent and under such conditions as may be prescribed in the vote establishing such building line. Whoever sustains damage thereby may recover the same under chapter seventy-nine. A

building line established under this section may be discontinued in the manner provided for the discontinuance of a highway or town way. Whoever sustains damages by the discontinuance of a building line may recover the same under chapter seventy-nine.

[1893, c. 462; R. L. 48, Sect. 103; 1913, 572, Sect. 1; 1917, c. 56; 344, c. 11, Sect. 73.]

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## STORM WATER.

### *Separate System of Plumbing.*

[General Laws, Chapter 83, Section 5.]

SECTION 5. In this section surface or storm water and such other waters as shall be specified by the department of public health shall be designated as waters and all other waters and sewage shall be designated as sewage. When a town has provided both a drain for waters and a sewer for sewage in a public way, the owner of every parcel of land abutting on such way or connected with such drain or sewer shall arrange his plumbing so that the waters shall be kept separate from the sewage; and shall make such connections with the drain and sewer respectively that the waters shall pass into the drain and the sewage into the sewer in accordance with the directions of the board or officer having charge of the repair and maintenance of sewers in such town.

[1903, c. 383, Sect. 1.]

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## SIGNS AND OTHER STRUCTURES PROJECTING INTO WAYS.

### *Permits for Signs and Other Structures Projecting into Ways.*

[General Laws, Chapter 85, Sections 8 and 9.]

SECTION 8. The municipal board or officer having charge of the laying out of public ways may grant per-

mits for the placing and maintaining of signs, advertising devices, clocks, marquees, permanent awnings and other like structures projecting into or placed on or over public ways in its town, and may fix the fees therefor, not exceeding one dollar for any one permit, and may make rules and regulations relating thereto, and prescribe the penalties for a breach of any such rules and regulations, not exceeding five dollars for each day during which any such structure is placed or maintained contrary to the rules and regulations so made, after five days' notice to remove the same has been given by such board or officer, or by a police officer of the town. All such structures shall be constructed, and, when attached to a building, shall be connected therewith, in accordance with the requirements of the inspector of buildings, building commissioner or other board or officer having like authority in the town.

[1915, c. 176, Sects. 1, 2; 1917, c. 344, V, Sects. 9, 10.]

*Not Applicable to Certain Structures.*

SECTION 9. The preceding section shall not apply to signs or other structures projecting into or over the way a distance of less than six inches, nor to poles, wires, conduits, and appurtenances of railroad, railway, telegraph and telephone, water, gas, electric light, heat and power companies.

[1915, c. 176, Sect. 3; 1917, c. 344, V, Sect. 11.]

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COMMON NUISANCES.

BURNT OR DANGEROUS BUILDINGS.

[General Laws, Chapter 139, Sections 1 and 3.]

SECTION 1. In a city or town in which the city council or the inhabitants of the town accept this and the two following sections or have accepted corresponding pro-



visions of earlier laws, the aldermen or selectmen, after written notice to the owner of a burnt, dilapidated or dangerous building, or his authorized agent, and after a hearing, may make and record an order adjudging it to be a nuisance to the neighborhood, or dangerous, and prescribing its disposition, alteration or regulation. The town clerk shall deliver a copy of the order to an officer qualified to serve civil process, who shall forthwith serve an attested copy thereof in the manner prescribed in section one hundred and twenty-four of chapter one hundred and eleven, and make return to said clerk of his doings thereon.

[1855, c. 469, Sects. 1, 6; G. S. 87, Sect. 1; P. S. 101, Sect. 1; R. L. 101, Sect. 1; 1919, 333, Sect. 7; 1920, c. 5.]

*Owner Aggrieved May Appeal to Superior Court.*

SECT. 2. A person aggrieved by such order may appeal to the superior court for the county where such building is situated, if, within three days after the service of such attested copy upon him, he presents to such court a petition stating his grievance and the order of the board. After such notice to the board as the court shall order, trial by jury shall be had as in other civil causes. The jury may affirm, annul or alter such order, and the court shall render judgment in conformity with said verdict, which shall take effect as an original order. If the order is affirmed, the petitioner shall pay the costs; if it is annulled, he shall recover from the town his damages, if any, and costs; and if it is altered, the court may render such judgment as to costs as justice shall require.

[1855, c. 469, Sects. 3-5; G. S. 87, Sects. 2-4; 1873, c. 261; P. S. 101, Sects. 2-4; R. L. 101, Sects. 2-4; 1919, c. 333, Sect. 7; 1920, c. 5.]

*Nuisances May be Abated, etc.*

SECT. 3. The aldermen or selectmen shall have the same power to abate and remove any such nuisance as is

given to the board of health of a town under sections one hundred and twenty-three to one hundred and twenty-five, inclusive, of chapter one hundred and eleven.

[1855, c. 469, Sect. 2; G. S. 87, Sect. 5; P. S. 101, Sect. 5; R. L. 101, Sect. 5.]

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## LICENSES.

### PUBLIC LODGING HOUSES.

#### *Definition.*

[General Laws, Chapter 140, sections 33, 35, 38, 40.]

SECTION 33. In cities of over fifty thousand inhabitants every building not licensed as an inn, in which ten or more persons are lodged free or for a charge of twenty-five cents or less for each person for a day of twenty-four hours, or for any part thereof, shall be deemed a public lodging house within the meaning of sections thirty-four to forty, inclusive. No building or part thereof erected, altered or converted to be used as such a public lodging house shall have the sleeping compartments arranged on the cubicle plan.

[1894, c. 414, Sect. 1; 1904, c. 242, Sects. 1, 8; 1911, c. 129; 1915, c. 160, Sect. 1.]

#### *Inspection of Means of Escape from Fire.*

SECT. 35. No such license shall be granted in any such city until the inspector of buildings thereof, or the other officer or board having authority to administer the laws and ordinances in regard to the construction of buildings therein, has certified that the building, if it has eight or more rooms or ten or more persons are accommodated above the second story, complies with the requirements of chapter one hundred and forty-three, and in other cases is provided with sufficient means of escape in case of fire, and that suitable appliances are provided for extinguishing

fires and for giving alarm to the inmates in case of fire; and such officer or board may from time to time require such alterations to be made or such additional appliances to be provided as may in his or its judgment be necessary for the protection of life and property in case of fire.

[1894, c. 414, Sect. 3; 1904, c. 242, Sects. 3, 8; 1913, 655, Sect. 20.

[For penalty see Sect. 40.]

*Access for Purposes of Inspection.*

SECT. 38. The keeper of every public lodging house shall at all times, when so required by an officer of the building department, of the health department, or of the police department, give him free access to said house or any part thereof.

[1894, c. 414, Sect. 6; 1904, c. 242, Sects. 6, 8.]

[For penalty, see Sect. 40.]

*Penalty.*

SECT. 40. Any keeper of a public lodging house who violates any provision of sections thirty-five to thirty-eight, inclusive, shall be punished by a fine of one hundred dollars.

[1894, c. 414, Sect. 7; 1904, c. 242, Sects. 7, 8.]

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## SUPERVISION OF PLUMBING.

[GENERAL LAWS, CHAPTER 142.]

*Definitions.*

SECTION 1. In this chapter the following words shall have the following meanings:

“Certificate,” certificates of registration issued in accordance with section three of chapter five hundred and thirty-six of the acts of nineteen hundred and nine, section two of chapter five hundred and ninety-seven of the acts of nineteen hundred and ten or chapter five hundred and eighteen of the acts of nineteen hundred and twelve.

“Examiners,” state examiners of plumbers appointed under section ten of chapter seventeen.

“Journeyman,” a person who himself does any work in plumbing subject to inspection under any law, ordinance, by-law, rule or regulation.

“Master plumber,” a plumber having a regular place of business and who, by himself or journeymen plumbers in his employ, performs plumbing work.

“Practical plumber,” a person who has learned the business of plumbing by working for at least two years as an apprentice or under a verbal agreement for instruction and who has then worked for at least one year as a journeyman plumber.

“Registered,” registered in accordance with section three of chapter five hundred and thirty-six of the acts of nineteen hundred and nine, section two of chapter five hundred and ninety-seven of the acts of nineteen hundred and ten or chapter five hundred and eighteen of the acts of nineteen hundred and twelve.

[1894, c. 455, Sect. 1; R. L. 103, Sect. 1; 1909, c. 536, Sect. 9; 219 Mass. 33; 225 Mass. 192.]

### *Application of Chapter.*

SECT. 2. Sections one to seven, inclusive, sections eleven and twelve and sections fourteen to sixteen, inclusive, shall apply to all cities and section thirteen shall apply to all cities except Boston; provided, that any such city except Boston may by vote of its city council exempt from the provisions of said sections any or all of its territory lying outside of the limits of the water supply of such city, or unconnected with a common sewer. Sections one, three, six and seven and sections eleven to sixteen, inclusive, shall apply to all towns which by vote of their inhabitants accept said sections or have accepted corresponding provisions of earlier laws, and said sections, except section



thirteen, shall apply to all towns which accept rules formulated by the examiners under sections eight and nine or have accepted them under corresponding provisions of earlier laws.

[1895, c. 453; R. L. 103, Sect. 12; 1909, c. 536, Sect. 8; 1910, c. 349, Sect. 4; 1911, c. 262.]

*Master Plumbers and Journeymen Must be Licensed.*

SECT. 3. No person shall engage in the business of a master plumber or work as a journeyman unless he is lawfully registered, or has been licensed by the examiners as provided in this chapter. The license or certificate of a journeyman shall be exhibited whenever required by an inspector of plumbing. Every master plumber's license or certificate shall at all times be displayed conspicuously within his place of business.

[1893, c. 477, Sect. 1; 1894, c. 455, Sect. 1; R. L. 103, Sect. 1; 1909, c. 536, Sect. 4; 213 Mass. 138; 217 Mass. 134.]

*Rules for Examinations of Plumbers.*

SECT. 4. The examiners may make such rules as they deem necessary for the proper performance of their duties, which shall take effect when approved by the department of public health. They shall examine each applicant desiring to engage in the business of a master plumber or to work as a journeyman, as to his practical knowledge of plumbing, house drainage and plumbing ventilation, and subject him to a practical test satisfactory to the examiners, who if satisfied of his competence shall issue to him a license as applied for. They shall hold frequent examinations in Boston and, twice in each year, hold examinations at five other convenient places within the commonwealth. Public notice shall be given of all examinations. Every application for examination shall be in the handwriting of the applicant who shall be notified by the examiners of the time and place of examination.

The examiners may, without payment of any fee, issue a probationary license in force for six months to a person who, having worked as an apprentice, or under a verbal agreement for instruction, for not less than three years, presents an application therefor with the signed endorsement of his employer agreeing to be responsible for all work done under the license and to have the licensee, at the expiration of the license, present himself for examination as a journeyman.

[1893, c. 477, Sects. 2, 4; 1894, c. 455, Sects. 2, 4; R. L. 103, Sects. 2, 4; 1909, c. 536, Sect. 2; 225 Mass. 192.]

*Fees for Licenses, Examinations and Renewals.*

SECT. 5. The fee for the license of a master plumber shall be two dollars; for examination and for renewals fifty cents each; for the license of a journeyman fifty cents each.

[R. L. 103, Sect. 4; 1909, c. 536, Sect. 3; 1893, c. 477, Sect. 4; 1894, c. 455, Sect. 4.]

*Licenses, Validity of — Registration and Revocation of.*

SECT. 6. Licenses and certificates issued by the examiners shall be valid throughout the commonwealth. The examiners shall forward to the board of health of each town, or to the inspector of buildings having control of the enforcement of regulations relative to plumbing in such town, the names and addresses of all persons in such town to whom such licenses have been granted. Licenses shall be issued for one year and may be renewed annually on or before May first upon payment of the required fee. Each holder of a master plumber's certificate or license shall register his name and business address with said inspector of buildings if he has such control, otherwise, with the board of health, in the town wherein he desires to engage in business as a master plumber. The examiners may, after notice and hearing, revoke the

under this chapter as is necessary to properly perform the duties imposed thereby, and they shall annually, before June first, make a detailed report to their respective cities or towns of all their proceedings under sections one to sixteen, inclusive, during the preceding year.

[1894, c. 455, Sect. 11; R. L. 103, Sect. 11.]

*Penalty for Certain Violations.*

SECT. 16. Every person engaged in the business of a master plumber or working as a journeyman not lawfully registered or licensed, if required by this chapter; and every person engaging in or working at the business of plumbing in a city or town when forbidden so to do under section seven; and every master plumber who engages or employs any person to work as a journeyman who has not been so registered or licensed; and every person violating any provision of sections one to fifteen, inclusive, of this chapter or any ordinance, by-law, rule or regulation made thereunder shall be punished by fine not exceeding fifty dollars. Any city or town subject to the preceding sections of this chapter neglecting to comply with any of its provisions shall forfeit fifty dollars to the use of the commonwealth for each month during which such neglect continues.

[1888, c. 105, Sect. 2; 1893, c. 477, Sect. 7; 1894, c. 455, Sect. 8; R. L. 103, Sect. 8; 1909, c. 536, Sect. 10; 1914, c. 287; 219, Mass. 219; 225 Mass. 192.]

*Marking, etc., of Range Boilers.*

SECT. 17. No range boiler shall be sold or offered for sale unless its capacity is plainly marked thereon in terms of Massachusetts standard liquid measure, and with the maker's business name, in such manner as to be easily identified.

[1916, c. 154, Sect. 1.]

*Same Subject.* \*

SECT. 18. No copper, iron or steel pressure range boiler, plain or galvanized, or other vessel or tank in which water is to be heated under pressure, shall be sold or offered for sale without having stamped thereon the maker's guarantee that it has been tested to not less than two hundred pounds hydraulic or hydrostatic pressure to the square inch, together with the maximum working pressure at which it may be installed. And no such boiler, or other vessel or tank in which water is to be heated under pressure, shall be installed if the working pressure is greater than forty-two and one half per cent of the guaranteed test pressure marked thereon by the maker.

[1916, c. 154, Sect. 2; 1917, c. 39, Sect. 1.]

*Penalty for Violation of Sections 17 and 18.*

SECT. 19. Whoever sells or offers or exposes for sale any range boiler not marked or stamped as provided in the two preceding sections, or which is falsely marked as having a capacity which is greater by seven and one half per cent than its true capacity, or who marks or causes the same to be marked with such false capacity, shall be punished by a fine not exceeding fifty dollars. The inspectors of plumbing within their respective cities and towns shall cause this and the two preceding sections to be enforced.

[1916, c. 154, Sect. 3; 1917, c. 39, Sect. 2.]

*Exceptions.*

SECT. 20. The three preceding sections shall not apply to the sale or offering for sale of installed range boilers or to the sale or offering for sale of range boilers as junk.

[1916, c. 154, Sect. 4.]



## GENERAL LAWS, CHAPTER 143.

INSPECTION, REGULATION AND LICENSES FOR BUILDINGS,  
ELEVATORS AND CINEMATOGRAPHS.

## GENERAL PROVISIONS.

## SECT.

## 1. Definitions.

## INSPECTION OF BUILDINGS.

17. Temporary flooring during construction.
18. Same subject.
19. Penalty.
22. Fire escapes to be kept clear.
23. Stairways to be kept clear.
35. Liability of licensee.
36. Inspection of theatres, etc.
37. Reports to be kept on file.
38. Copies of ratings, etc., to be sent to licensee. Pen-  
alty for noncompliance with order.
39. Copy of ratings, etc., may be posted.
40. Penalty for false statement, etc.
41. Penalty for giving or receiving free pass.
44. Watchmen in hotels, etc.
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SECT.

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GENERAL PROVISIONS.

*Definitions.*

SECTION 1. In this chapter the following terms, unless a contrary meaning is required by the context or is specifically prescribed, shall have the following meanings:

“Alteration,” changes in or addition to a building.

“Department,” department of public safety.

“Inspector,” an inspector of the division of inspection of the department of public safety, except that in sections thirty-four to thirty-eight, inclusive, “inspector” shall include the inspectors of the building department of Boston and in sections sixty-three to sixty-six, inclusive, “inspector” shall include a building inspector of a city or town.

“Inspector of buildings,” a building inspector of a city or town.

“Miscellaneous hall,” a building or part thereof containing an assembly hall with a seating capacity of not more than four hundred, a society hall, or a hall in a public or private school building.

“Public building,” any building or part thereof used as a public or private institution, schoolhouse, church, theatre, special hall, public hall, miscellaneous hall, place of assemblage or place of public resort.

“Public hall,” any building or part thereof, except theatres, armories, churches and schools, containing an assembly hall with a seating capacity of more than four hundred and used for public gatherings and for such entertainments, not requiring the use of scenery and other stage appliances, as the licensing officer may approve.

“Repair,” the reconstruction or renewal of a building or part thereof damaged by fire or other cause.

“Special hall,” a building or part thereof containing an assembly hall with a seating capacity of more than four hundred which may be used for occasional performances for the entertainment of spectators, with the use of scenery under such conditions as the licensing officer shall direct and for public gatherings.

“Story,” any horizontal portion through a building between floor and ceiling of which the ceiling is six feet or more above the average grade of the sidewalk or ground adjoining.

“Supervisor of plans,” an inspector of the division of inspection of the department of public safety designated by the commissioner of public safety to receive the plans and specifications of all buildings subject to this chapter, to be erected or in which alterations are to be made, and to act officially upon them under the direction of the chief of inspections of the department of public safety.

“Theatre,” a building or part thereof in which it is intended to make a business of the presentation of performances for the entertainment of spectators, which has a seating capacity of more than four hundred, with a stage which can be used for scenery and other stage appliances.

[R. L. 104, Sect. 14; 1904, c. 450, Sect. 1; 1913, c. 610, Sect. 2; c. 655, Sects. 14, 30, 39, 41; c. 806, Sect. 1.]

#### INSPECTION OF BUILDINGS.

##### *Temporary Flooring During Construction.*

SECT. 17. If, in the erection of an iron or steel framed building, the spaces between the girders or floor beams of any floor are not filled or covered by the permanent construction of said floors before another story is added to the building, a close plank flooring shall be placed and maintained over such spaces from the time when the beams or girders are placed in position until said permanent construction is applied; but openings protected by a strong hand railing not less than four feet high may be left through said floors for the passage of workmen or material: provided, that when such flooring cannot be used without serious interference with the work of construction, such provision shall be made to protect the workmen from falling material as the inspector shall direct.

[1901, c. 166, Sect. 1; R. L. 104, Sect. 44; 1909, c. 514, Sect. 97; 1913, c. 655, Sect. 17; 194 Mass. 431; 213 Mass. 229.]

[For penalty, see Sect. 19.]

##### *Same Subject.*

SECT 18. In the construction of any iron or steel framed building having a clear story of twenty-five feet elevation or more, a staging with a close plank flooring shall be placed under and not more than ten feet below



the under side of the whole extent of the beams, girders or trusses of such story upon which iron or steel workers are working.

[1901, c. 166, Sect. 2; R. L. 104, Sect. 45; 1909, c. 514, Sect. 98; 1913, c. 655, Sect. 18.]

[For penalty, see Sect. 19.]

*Penalty.*

SECT. 19. Violations of any provision of the two preceding sections shall be punished by a fine of not less than fifty nor more than five hundred dollars.

[1901, c. 166, Sect. 4; R. L. 104, Sect. 46; 1909, c. 514, Sect. 99; 1913, c. 655, Sect. 19.]

*Fire Escapes to be Kept Clear.*

SECT. 22. Any article placed upon a fire escape or an outside means of egress of any building is hereby declared a common nuisance. Any court authorized to issue warrants in criminal cases may, upon complaint under oath made by any police officer that any article is placed or maintained upon a fire escape or outside means of egress of any building, issue a warrant to bring such article when found before a court having jurisdiction of the same, and all articles seized under the authority of such a warrant shall be disposed of in like manner as gaming implements seized under chapter two hundred and seventy-six. Any owner, lessee, tenant or occupant of any building who maintains or permits to remain upon any fire escape or outside means of egress of any building any article for more than twenty minutes shall be punished by a fine of not more than one hundred dollars. The existence of any article upon a fire escape or outside means of egress of any building shall be prima facie evidence that such article was so placed, maintained or permitted to remain by the occupant of the

premises having access from said building to said fire escape or outside means of egress.

[1905, c. 347, Sect. 1.]

*Stairways to be Kept Clear.*

SECT. 23. Every stairway of every building shall be kept free and unobstructed, and any person who permits any article to remain in any stairway of any building in such a manner as may impede the egress of any person lawfully in said building or the ingress of any person lawfully entitled to enter said building shall be punished by a fine of not more than five hundred dollars. The existence of any article in any such stairway in any building shall be prima facie evidence that it was placed or permitted to remain therein by the owner, lessee, tenant or occupant of the building.

[1905, c. 347, Sect. 2.]

*Licenses for Theatres, Etc.*

SECT. 34. In sections thirty-four to thirty-eight inclusive, the term "licensing officer" shall mean the mayor of Boston and the commissioner of public safety. In Boston the mayor and elsewhere the commissioner of public safety shall issue licenses for theatres, special halls and public halls. He may require such changes in the structural or other condition of any building before issuing any license as in his opinion the public safety requires, but no change shall be ordered in excess of the requirements for a new building of like character. In buildings existing on November first, nineteen hundred and thirteen, an equivalent of the conditions required by law may be accepted by the licensing officer; provided that such equivalents are set forth in detail in the license. The licenses provided for herein shall be conspicuously posted

near the main entrance of the theatre, special hall or public hall. Licenses for theatres except in Boston shall expire on the first day of September, for special halls on the first day of August, and for public halls on the first day of July of each year.

[1904, c. 450, Sect. 2; 1905, c. 342, Sects. 1, 2; 1908, c. 335, Sect. 1; 1910, c. 284, Sect. 1; 1913, c. 655, Sect. 31.]

### *Liability of Licensee.*

SECT. 35. The licensee shall be responsible, civilly and criminally, for non-compliance with the laws applicable to the theatre, special hall or public hall covered by his license, and for non-compliance with the conditions thereof. The licensing officer shall cause a complete inspection of all theatres to be made once in each month, of special halls and public halls once in every six months, and as much oftener as circumstances may require.

[1904, c. 450, Sect. 3; 1913, c. 655, Sect. 32.]

### *Inspection of Theatres, Etc.*

SECT. 36. Every inspection of theatres, special halls or public halls shall cover all details relating to the condition of the building as regards the safety of life and property. The inspector shall make a signed report as to all such details upon a tabulated inspection blank, the form of which shall be determined by the licensing officer. The forms of such blanks may be adapted to the circumstances of the different classes of buildings, but shall be such as to enable the inspectors to report a rating on the points and in the form hereinafter specified, and shall include a detailed table of legal requirements, with a statement as to compliance or non-compliance with each. All inspectors inspecting theatres, special halls and public halls shall on the first of each week forward to the licensing officer the reports of their inspections of the previous week, and shall

rate each theatre, special hall or public hall on the following points in the following form:

1. Compliance with existing laws, non-compliance in any particular to be specified.

2. The following ratings of each building as to the safety of the audience, in the judgment of the inspectors, in the light of improved methods of insuring safety:

Condition, whether poor, fair, good or excellent.	Remarks.
(a.) Structural condition.	
(b.) Facility of escape of audience.	
(c.) Heating apparatus.	
(d.) Water supply.	
(e.) Lighting apparatus.	
(f.) Condition of fire apparatus.	
(g.) Condition of sprinklers.	
(h.) Condition of fire resisting curtain.	
(i.) Protection against neighborhood hazard.	
(j.) General condition of appliances and apparatus.	
(k.) General condition of stage.	
Rating as a whole.	
With regard to safety of audience.	

And such other points as in the opinion of the licensing officer may be suitable. These reports and ratings shall be signed by the inspectors, and shall give the date of the inspection, with such remarks upon the condition of each theatre, special hall and public hall as may be suitable to give notice of danger or to give confidence in the safety of such buildings. After each inspection of a theatre, special hall or public hall, the inspector shall post a notice in conspicuous type, near the main entrance thereof, in the following form:

This theatre (or special hall) (or public hall) has been inspected by inspector (name of inspector) on (date)

[1904, c. 450, Sect. 4; 1913, c. 655, Sect. 33.]

### *Reports to be Kept on File.*

SECT. 37. The full inspection reports of theatres, special halls and public halls shall be kept on file by the



licensing officer, but, except as hereinafter provided, shall not be open to examination by the public until the expiration of one month from the time when they were rendered, except with the consent of the licensing officer. Every licensee shall be entitled to examine the full reports of his own building at any time. The licensing officer shall make a full report annually of the condition of all theatres, special halls and public halls, which shall be open to examination by the public at all times. The reports of inspectors shall be public records of matters of public interest; and a fair publication of these reports or parts thereof, or comment thereon, by any person, in newspapers or otherwise, shall be privileged.

[1904, c. 450, Sect. 6; 1913, c. 655, Sect. 34.]

*Copies of Ratings, etc., to be Sent to Licensee. Penalty for Non-compliance with Order.*

SECT. 38. A certified copy of all ratings and conclusions of the inspectors in respect to any licensed theatre, special hall or public hall shall be delivered or mailed by the licensing officer to the licensee at the building. If any inspector shall report that the laws or the conditions of the license are not complied with by any licensee, the licensing officer may notify the licensee, fixing a time within which he shall comply with the law and the conditions of the license. If at the expiration of such time there has not been such compliance, the licensing officer shall give a hearing to the licensee; and if upon investigation he shall find that there is a cause, he shall revoke the license. The licensing officer may, if in his opinion the public safety requires it, order any theatre, special hall or public hall to be closed pending a hearing upon the revocation of the license, and any person failing to comply with such order shall be punished by a fine of not less than fifty nor more than one thousand dollars.

[1904, c. 450, Sect. 8; 1906, c. 105, Sect. 2; 1913, c. 655, Sect. 35.]

*Copy of Ratings, etc., May be Posted.*

SECT. 39. Any licensee may post upon his premises a certified copy of the complete table of ratings and conclusions relating to the theatre, special hall or public hall covered by his license, but he shall not post an incomplete copy of such table.

[1904, c. 450, Sect. 9; 1913, c. 655, Sect. 36.]

*Penalty for False Statement, etc.*

SECT. 40. Any person having any duty to perform under this chapter in connection with the licensing or inspection of theatres, special halls or public halls who wilfully makes any false statement or report or any false record of any statement, report or rating as to any such theatre, special hall or public hall shall be punished by a fine of not more than one thousand dollars or by imprisonment for not more than one year.

[1904, c. 450, Sect. 13; 1913, c. 655, Sect. 37.]

*Penalty for Giving or Receiving Free Pass.*

SECT. 41. Any officer or person having any duty in any way connected with the inspection of theatres, special halls or public halls, who requests for himself or another, or accepts or uses any ticket or pass or privilege of admission, or admission, to any theatre, special hall or public hall for which he is to pay or has paid either nothing or a price less than that demanded of the public generally, and any owner, proprietor, manager, lessee, agent or employee of any theatre, special hall or public hall, or any other person who issues, delivers, offers or allows any such ticket, pass, privilege or admission to any such officer or person, or to any other person, at the request, solicitation, procurement or with the connivance of any such officer or person, shall be punished by a fine of not less than one hundred nor more than one thousand dollars.

[1904, c. 450, Sect. 14; 1913, c. 655, Sect. 38.]

*Watchmen in Hotels, etc.*

SECT. 44. The keeper of a hotel, boarding or lodging house or family hotel containing one hundred or more sleeping rooms, and being four or more stories high, shall have therein at least two competent watchmen, each properly assigned, and each on duty between the hours of nine o'clock at night and six o'clock in the morning. The keeper of every hotel, boarding or lodging house or family hotel containing fifty or more sleeping rooms, but less than one hundred, and being three stories high, shall have between said hours at least one competent watchman on duty therein. In all such hotels, lodging houses or family hotels, the halls, corridors and stairways shall be properly lighted at night, and a red light shall be kept during the night at the top and bottom of each flight of stairs; and one or more proper alarms or gongs, capable of being heard throughout the house, shall always remain easy of access and ready for use in every such building to give to the inmates warning of fire. The keeper of every such hotel, boarding or lodging house or family hotel shall keep a notice descriptive of such means of escape conspicuously posted in every sleeping room.

[1883, c. 251, Sect. 1; 1884, c. 223, Sect. 2; R. L. 104, Sect. 29; 1913, c. 655, Sect. 42.]

[For penalty, see Sect. 46.]

*Penalty for Hindering Inspector, etc.*

SECT. 50. Any person who hinders or prevents or attempts to prevent the commissioner of public safety, the chief of inspections of the department or any inspector from entering any building, structure or enclosure or part thereof in the performance of his duty in the enforcement of the laws of the commonwealth relating thereto shall be punished by a fine of not less than fifty nor more than one hundred dollars.

[1904, c. 450, Sect. 12; 1908, c. 389, Sect. 2; 1913, c. 655, Sect. 49.]

*Penalty for Unlicensed Use as Theatre, Etc.*

SECT. 52. No person shall occupy or use any building or part thereof as a theatre, special hall, public hall, miscellaneous hall, place of assemblage or place of public resort until a license therefor has been issued by the commissioner of public safety or the mayor of Boston, or a certificate therefor by an inspector or an inspector of the building department of Boston. The certificate of the inspector shall be conclusive evidence of a compliance with sections fifteen to sixty, inclusive, for such use of a hall as he shall set forth in detail in the certificate, and shall be conspicuously posted near the main entrance of the hall. Violations of this section or of the conditions of a license or certificate shall be punished by a fine of not less than twenty-five nor more than one thousand dollars or by imprisonment for not more than one year, and the license or certificate may be revoked.

[1096, c. 105, Sect. 1; 1908, c. 335, Sects. 1, 2; 1910, c. 143; c. 284, Sect. 1; 1913, c. 655, Sects. 39, 51.]

*General Penalty.*

SECT. 53. Whoever, being the owner, lessee or occupant of any building described in section twenty-one or part thereof, violates any provision of sections fifteen to fifty-two, inclusive, for which no other penalty is specifically prescribed shall be punished by a fine of not less than fifty nor more than five hundred dollars.

[1882, c. 266, Sect. 3; 1885, c. 326, Sect. 2; 1888, c. 426, Sect. 12; 1894, c. 382, Sect. 2; c. 481, Sects. 60, 62; R. L. 104, Sects. 55, 56; 1913, c. 655, Sect. 53; 230 Mass. 306.]

*Enforcement.*

SECT. 54. Sections fifteen to fifty-two inclusive, shall, except when otherwise specifically provided, be enforced by the commissioner of public safety, the chief of inspections of the department and inspectors of the division of



inspection of the department. The commissioner of public safety shall issue regulations necessary for their uniform enforcement. All sections of this chapter which apply to Boston shall be enforced by the building commissioner.

[1901, c. 166, Sect. 3; R. L. 104, Sect. 46; 1909, c. 514, Sect. 99; 1913, c. 610, Sect. 2; c. 655, Sect. 54.]

### *Appeal.*

SECT. 55. Any person aggrieved by an order, requirement or direction of an inspector under any of the preceding sections may, within thirty days after the service thereof, appeal to a judge of the superior court for the county in which the building to which such order, requirement or direction relates is situated for an order forbidding its enforcement; and after such notice as said court shall direct to all parties interested, a hearing may be had before the court at an early and convenient time and place fixed by it; or the court may appoint three disinterested persons, skilled in the subject matter of the controversy, to examine the matter and hear the parties; and the decision of said court, or the written decision under oath of a majority of said experts, filed in the office of the clerk of courts in said county within ten days after such hearing, may alter, annul or affirm such order, requirement or direction. Such decision or a certified copy thereof shall have the same authority, force and effect as the original order, requirement or direction of the inspector. If such decision annuls or alters the order, requirement or direction of the inspector, the court shall order the inspector not to enforce his order, requirement or direction, and in every case the certificate required by law shall thereupon be issued by said court or by said experts.

[1890, c. 438, Sect. 1; 1894, c. 481, Sect. 5; R. L. 104, Sect. 19; 1908, c. 487, Sect. 1; 1913, c. 655, Sect. 55; 1917, c. 156, Sect. 2; 228 Mass. 368.]

*Fees for Experts.*

SECT. 56. The court may award reasonable compensation to such experts, to be paid by the county in which the application for an order of the court was made, if the order, requirement or direction of the inspector is altered or annulled, otherwise by the applicant. If the order, requirement or direction of the inspector is affirmed by the court or the experts, costs shall be taxed against the applicant as in civil cases, and shall be paid into the treasury of the said county.

[1890, c. 438, Sects. 2, 3; 1894, c. 481, Sects. 6, 7; R. L. 104, Sects. 20, 21; 1908, c. 487, Sect. 2; 1913, c. 655, Sect. 56.]

*Restraining Illegal Erection.*

SECT. 57. The supreme judicial or superior court may, upon the petition of an inspector, or in Boston the building commissioner, temporarily or permanently restrain the erection, construction, alteration, use or occupation of a building, in violation of any provision of sections fifteen to fifty-two, inclusive.

[1888, c. 316, Sect. 2; c. 426, Sect. 12; 1893, c. 199, Sect. 2; 1894, c. 382, Sect. 2; c. 481, Sects. 26, 38; R. L. 104, Sects. 51, 53; 1913, c. 655, Sects. 52, 57.]

*Concurrent Jurisdiction of Inferior Courts.*

SECT. 58. District courts shall have jurisdiction concurrently with the superior court of prosecutions and proceedings at law under sections three to fifty-two, inclusive.

[1906, c. 105, Sect. 6; 1908, c. 335, Sect. 3; c. 388, Sect. 3; 1913, c. 655, Sect. 58.]

*Enforcement of Inspectors' Orders.*

SECT. 59. The supreme judicial or superior court may, upon the application of the commissioner of public safety, the chief of inspections of the department or any inspector, or in Boston of the building commissioner, enforce, by any

suitable process or decree, any provision of sections fifteen to fifty-two, inclusive, and any order or requirement of any person made under authority thereof.

[1094, c. 450, Sect. 11; 1913, c. 655, Sect. 59.]

*Restraining Illegal Use, Etc., of Buildings.*

SECT. 60. The supreme judicial or superior court may restrain the illegal placing, maintenance or use of any building, structure, or other thing. It may, upon the petition of a city or town for such relief, require the removal of any such building, structure or other thing by the owner, and may authorize the city or town, in default of such removal by the owner, to remove it at his expense. Upon such petition, the defendant shall be presumed to have acted without a license or authority until he proves the contrary.

[1899, c. 326; R. L. 104, Sect. 52; 1913, c. 655, Sect. 60.]

*Notice to Assessors of Permits for Buildings.*

SECT. 61. The inspector of buildings in every city and town having such an officer shall give written notice to the assessors thereof of the granting by him of permits for the construction of any building therein or for any substantial alteration therein or addition thereto. Such notice shall be given within seven days after the granting of each permit and shall state the name of the person to whom the permit was granted and the location of the building to be constructed or altered or to which an addition is to be made.

[1913, c. 676, Sect. 1.]

ELEVATORS.

*Installation and Inspection.*

SECT. 62. In cities and towns not having a building department or an inspector of buildings, the installation and alteration of all elevators shall be under the supervision of the inspectors of the division of inspections of

the department. In cities and towns having an inspector of buildings or a person acting as such, the installation and alteration of all elevators shall be under his supervision. No elevator shall be installed or altered until a copy of the plans and specifications of such elevator or of the proposed alterations shall have been filed by the owner of the premises where the elevator is to be installed or altered, or by the manufacturer of the elevator, with the inspector or building inspector having jurisdiction and a certificate of approval or a specification of requirements shall have been issued by him. The inspector and inspectors of buildings or departments of buildings of cities and towns shall enforce the regulations made by the board of elevator regulations as hereafter provided.

[1901, c. 439; R. L. 104, Sect. 27; 1913, c. 806, Sects. 1, 7.]

[For penalty, see Sect. 71.]

#### *Test of Safety Devices.*

SECT. 63. On completion of the work of installation or alteration, the manufacturer of the elevator or the persons making the alterations shall make a practical test of the safety devices of the elevator in the presence of the inspector having jurisdiction thereof; and if the test is satisfactory to him, he shall issue a certificate approving the elevator and safety devices thereof.

[1913, c. 806, Sect. 2.]

#### *Report of Inspection.*

SECT. 64. All elevators shall be thoroughly inspected and a practical test made of the safety devices required therefor at intervals of not more than one year, and at such other times as may be deemed necessary by the inspector having jurisdiction thereof. Within ten days after the inspection, he shall report the result thereof to the commissioner of public safety, upon forms to be



furnished by him. This requirement for the making of inspection reports shall not apply to the city of Boston.  
[1913, c. 806, Sect. 3.]

*Certificate of Inspection to be Posted in Elevator.*

SECT. 65. If in the judgment of any inspector having jurisdiction thereof an elevator is safe, and if the elevator has been constructed in the manner required by law or by the regulations of the board of elevator regulations, the inspector shall issue a certificate to that effect to the owner of the elevator or to the person in charge thereof, who shall post the certificate in a conspicuous place in or near the cab or car of such elevator. Otherwise, the inspector shall immediately post conspicuously upon the entrance or door of the cab or car of such elevator, or upon the elevator, a notice of its dangerous condition, and shall prohibit the use of the elevator until it has been made safe to his satisfaction. No person shall remove such notice or operate such elevator until the inspector has issued his certificate as aforesaid.

[1883, c. 173; 1894, c. 481, Sect. 43; R. L. 104, Sect. 28; 1911, c. 455; 1913, c. 806, Sect. 4; 227 Mass. 415.]

[For penalty, see Sect. 71.]

*Report of Accidents and Defective Elevators.*

SECT. 66. Any owner, operator or person in charge of an elevator or any person employed to inspect an elevator shall, if he thinks such elevator is unsafe, make a written report thereof to the inspector having jurisdiction thereof, who shall forthwith inspect such elevator. If any accident occurs to an elevator, the operator, person in charge or owner having knowledge thereof shall immediately report such accident to the inspector having jurisdiction, who shall forthwith inspect such elevator.

[1913, c. 806, Sect. 5.]

[For penalty, see Sect. 71.]

*Petition for Changes in Regulations.*

SECT. 67. Any person engaged in the inspection, alteration, construction, repair or operation of elevators may from time to time, by written petition to the commissioner of public safety, request that rules and regulations established by a board of elevator regulations heretofore or hereafter appointed be altered or amended. The commissioner may grant public hearings upon such petition, and if he deems it advisable may appoint a new board of elevator regulations as provided in section ten of chapter twenty-two.

[1913, c. 806, Sect. 9; 1919, c. 350, Sect. 106.]

*Board to Amend Regulations.*

SECT. 68. The board of elevator regulations shall frame amendments to the regulations relating to the construction, installation, alteration and operation of all elevators, and relative to the location, design and construction of shafts or enclosures for elevators, safety devices, gates and other safeguards, protection against the elevator or hoisting machinery, and means to prevent the spread of fire, and also amendments to the regulations designed to make uniform the work of the inspectors of the division of inspections of the department and of inspectors of buildings throughout the commonwealth.

[1913, c. 806, Sect. 6.]

*Establishment of Regulations.*

SECT. 69. The board of elevator regulations shall, within three months after its members are appointed, draft amendments to the regulations and submit the same to the governor and council for their approval. Within sixty days after such submission they shall approve the same, with such alterations and amendments and after such public hearings as they may deem proper;

and the regulations so altered and amended shall become part of the rules and regulations pertaining to elevators. The commissioner of public safety shall furnish upon application a printed copy of the regulations to all manufacturers of elevators operating in the commonwealth, to all inspectors of buildings in the cities and towns of the commonwealth, and to all others who are concerned. The board shall be dissolved upon the approval of the regulations by the governor and council.

[1913, c. 806, Sects. 7, 8; 1919, c. 350, Sects. 99, 106.]

### *Appeal.*

SECT. 70. Whoever, except in Boston, is aggrieved by the order, requirement or direction of an inspector of buildings of a city or town in reference to the installation or alteration of elevators may, within ten days after the service thereof, appeal as provided in section fifty-five; and all the provisions of said section, except as otherwise provided herein, shall apply to the procedure on such appeal. In Boston the right of appeal shall be the same, as provided by section seven of chapter five hundred and fifty of the Acts of nineteen hundred and seven.

[1913, c. 806, Sect. 11.]

### *Penalty.*

SECT. 71. Any person violating or failing to comply with any provision of sections sixty-two to seventy, inclusive, or of any regulation established thereunder shall be punished by a fine of not more than five hundred dollars.

[1913, c. 806, Sect. 12.]

### CINEMATOGRAPHS.

#### *Regulation.*

SECT. 72. No cinematograph or similar apparatus involving the use of a combustible film more than ten inches in length, except one using only an enclosed incan-

descent lamp and cellulose acetate films not more than one and one quarter inches in width, shall, except as provided by section eighty-five, be kept or used for the purpose of exhibiting such films in or upon the premises of a public building until such cinematograph or similar apparatus has been inspected and approved by an inspector, who shall have placed thereon a numbered metal tag; nor until a booth or enclosure, which has been inspected and approved by such an inspector and his certificate issued therefor, has been provided for said apparatus; nor until such precautions against fire as the commissioner of public safety may specify have been taken by the owner, user or exhibitor: provided, that no such apparatus shall be operated with oxyhydrogen gas, so-called, or with limelight. In addition, in Boston the location of any booth or enclosure surrounding such apparatus shall be approved by the building commissioner, who may order such additional precautions against fire as he may deem necessary.

[1905, c. 176, Sect. 1; 1908, c. 566, Sect. 1; 1914, c. 791, Sect. 1;  
1915, c. 169, Sect. 1.]

*Permits for Special Exhibitions.*

SECT. 82. Except in Boston, the commissioner of public safety may grant permits for the special exhibition of pictures by the use of a cinematograph or similar apparatus in a public building which in his opinion is in safe condition for such exhibitions, and he may prescribe such regulations as he may deem necessary for the presentation of the same. Two dollars shall accompany the application for each permit.

[1911, c. 440; 1914, c. 791, Sect. 12.]

*Application of Certain Sections.*

SECT. 83. Sections seventy-two to seventy-six, inclusive, shall not apply to any motion picture machine operated with only cellulose acetate films not more than one



inch and one fourth in width and requiring not more than five hundred watts of electric current to operate the arc: provided, that such machines shall not be kept or used in a public building except under such regulations as the commissioner of public safety shall prescribe.

[1914, c. 791, Sect. 13.]

*Penalty.*

SECT. 84. Any person keeping or using a cinematograph or similar apparatus contrary to any provision of sections seventy-two to eighty-four, inclusive, or in violation of any rule or regulation made by the commissioner of public safety, or, in Boston, in violation of any regulation or requirement made by the building commissioner in accordance with said sections, shall be punished by a fine of not less than fifty nor more than five hundred dollars.

[1905, c. 176, Sect. 3; 1908, c. 566, Sect. 3; 1914, c. 791, Sect. 15.]

*Special Licenses for Operators in Churches, Schools, Etc.*

SECT. 85. Notwithstanding any provision of sections seventy-two to eighty-four, inclusive, the commissioner of public safety may grant special licenses for operators of motion picture machines in churches, schoolhouses or public institutions in cities and towns, except Boston, which in his opinion are in safe condition for said exhibitions, and he may prescribe regulations for the proper conduct of the same. Two dollars shall accompany each application for such special license.

[1911, c. 440, Sects. 1, 2, 3; 1914, c. 791, Sect. 17.]

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GENERAL LAWS, CHAPTER 148.

FIRE PREVENTION.

*Application of Certain Sections.*

SECTION 2. Sections six, ten and thirteen to twenty-three, inclusive, shall not apply to the metropolitan dis-

trict. Sections twenty-eight to fifty-one, inclusive, shall apply only to the said district.

[1914, c. 795, Sect. 28; 1920, c. 436, Sect. 2.]

*Delegation of Powers.*

SECT. 31. The marshal may delegate the granting and issuing of any licenses or permits authorized by sections thirty to fifty-one, inclusive, or the carrying out of any lawful rule, order or regulation of the department, or any inspection required under said sections, to the head of the fire department or to any other designated officer in any city or town in the metropolitan district.

[1914, c. 795, Sect. 4.]

*Paint or Inflammable Fluids.*

SECT. 32. No paint, oil, benzine, naphtha or other inflammable fluid shall be kept or stored in bulk or barrel otherwise than in the tank of an automobile, motor boat or stationary engine, in total quantity exceeding ten gallons, in any part of any building used for habitation, or within fifty feet of any building used for dwelling purposes, unless such paint, oil or other inflammable fluid is inclosed within a fireproof room or structure, constructed and arranged to the satisfaction of the marshal; and no paint, oil, benzine, naphtha or other inflammable fluid, except for domestic purposes, shall be kept, used, stored or sold in any part of any building used for habitation unless a permit therefor has first been obtained from the marshal under such terms and conditions as he may prescribe.

[1914, c. 795, Sect. 6; 4 Op. A. G. 397.]

[For penalty, see Sect. 51.]

*Combustible Materials.*

SECT. 33. No part of any building used for habitation, nor that part of any lot within fifty feet of any building so used, shall be used for the storage, keeping or handling

of any combustible article for other than domestic purposes, or of any article or material that may be dangerous to the public safety as a fire menace, unless a permit has first been obtained therefor from the marshal. No part of any such building shall be used as a carpenter's shop, nor for the storage, keeping or handling of feed, hay, straw, excelsior, shavings, sawdust, cotton, paper stock, feathers or rags, except under such terms and conditions as the marshal may prescribe.

[1914, c. 795, Sect. 7].

[For penalty, see Sect. 51.]

### *Removal of Combustible Refuse.*

SECT. 34. The marshal or such person as he may designate may require the removal and destruction of any heap or collection of refuse or debris that in his opinion may become dangerous as a fire menace.

Neglect on the part of either the owner or occupant, or both, to remove the cause of complaint under this or the preceding section, after notice thereof has been served, shall be deemed a refusal; and the marshal or the person whom he may designate may enter upon the premises and remove such material or article and the containers thereof as may be covered by or mentioned in the notice issued. The material or articles removed, if of no substantial value, shall be destroyed; otherwise they shall be placed in storage, and the total costs attending such action shall be paid by the owner or occupant.

[1914, c. 795, Sect. 8.]

[For penalty, see Sect. 51.]

### *Use of Salamanders.*

SECT. 35. No salamander or stove for drying plaster shall be used in any building except under such conditions as may be prescribed by the marshal; and no such salamander or stove shall be set upon a wooden floor unless it is

raised above the floor at least four inches and set upon brick or other incombustible material in a bed of sand at least two inches thick, spread upon the floor and covering an area of at least two feet in all directions larger than the area of the salamander or stove.

[1914, c. 795, Sect. 9.]

[For penalty, see Sect. 51.]

*Automatic Sprinklers.*

SECT. 36. Any building used in whole or in part for the business of woodworking, or for the business of manufacturing or working upon wooden, basket, rattan or cane goods or articles, or tow, shavings, excelsior, oakum, rope, twine, string, thread, bagging, paper, paper stock, cardboard, rags, cotton or linen, or cotton or linen garments or goods, or rubber, feathers, paint, grease, soap, oil, varnish, petroleum, gasoline, kerosene, benzine, naphtha or other inflammable fluids, and any building used in whole or in part for the business of keeping or storing any such goods or articles, except in such small quantities as are usual for domestic use or for use in connection with and as incident to some business other than such keeping or storing, shall, upon the order of the marshal, be equipped with automatic sprinklers; provided, that no such order shall apply to any building unless four or more persons live or are usually employed therein above the second floor.

[1914, c. 795, Sect. 10; 4 Op. A. G. 585.]

[For penalty, see Sect. 51.]

*Dry Pipes in Basements.*

SECT. 37. The basements of any buildings shall, upon written notice by the marshal to the owners of the buildings, be equipped with such dry pipes with outside connections as he may prescribe.

[1914, c. 795, Sect. 11.]

[For penalty, see Sect. 51.]



*Penalty.*

SECT. 38. Owners of buildings who, within six months after having received written notice from the marshal under section thirty-six or thirty-seven, fail to comply with the requirement of such notice shall be punished by a fine of not more than one thousand dollars.

[1914, c. 795, Sect. 12.]

*Rules as to Fires and Fire Protection.*

SECT. 39. In addition to the powers given by sections thirty to thirty-eight, inclusive, the marshal may make orders and rules relating to fires, fire protection and fire hazard binding throughout the metropolitan district, or part thereof, or binding upon any person or class of persons within said district, limited, however, to the following subjects:

A. Requiring the keeping of portable fire extinguishers, buckets of water or other portable fire extinguishing devices on any premises by the occupant thereof, and prescribing the number and situation of such devices.

B. Prohibiting or regulating the accumulation and requiring the removal of combustible rubbish, including waste paper, cardboard, string, packing material, sawdust, shavings, sticks, rags, waste leather and rubber, boxes, barrels, broken furniture and other similar light or combustible refuse.

D. Causing obstacles that may interfere with the means of exit to be removed from floors, halls, stairways and fire escapes.

E. Ordering the remedying of any condition found to exist in or about any building or other premises or any ship or vessel in violation of any law, ordinance, by-law, rule or order in respect to fires and the prevention of fire.

H. Requiring the cleaning of chimney flues and vent pipes.

I. Requiring proper safeguards to be placed and maintained about or over roof skylights.

K. Requiring that all signs and advertising devices erected on buildings shall be approved by said marshal.

M. Defining the classes of buildings to be equipped with sprinkler protection as provided by section thirty-six.

[1914, c. 795, Sect. 13; Op. A. G. 580.]

*Orders to Occupant or Owner.*

SECT. 41. If buildings or other premises are owned by one person and occupied by another under lease or otherwise, the orders of the marshal shall apply to the occupant alone, except where the rules or orders require the making of additions to or changes in the premises themselves, such as would immediately become real estate and be the property of the owner of the premises. In such cases the rules or orders shall affect the owner and not the occupant; and unless it is otherwise agreed between the owner and the occupant, the occupant whose use of the premises has caused the making of such additions or changes, in addition to his rent or other payments, shall, after the additions or changes are made, pay a reasonable per cent of the cost thereof annually to the owner of the premises. No rule or order shall be made or enforced which requires an expenditure by the owner or occupant of more than five per cent of the last annual assessed valuation of the land and buildings to which such rule or order relates.

[1914, c. 795, Sect. 22; 4 Op. A. G. 572.]

*Appeals.*

SECT. 45. The marshal shall hear and determine all appeals from the acts and decisions of the heads of fire departments and other persons acting or purporting to act under his authority, done or made or purporting to be done or made under the provisions of sections thirty to fifty-one, inclusive, and shall make all necessary and proper orders

thereon. Any person aggrieved by any such action of the head of a fire department or other person may appeal to the marshal.

[1914, c. 795, Sect. 18.]

*Tanks for Storage of Fluid.*

SECT. 54. No person shall construct, maintain or use any tank or container of more than ten thousand gallons capacity, unless constructed principally of wood, for the storage of any fluid other than water, unless the same is underground, without first securing a permit therefor from the marshal. Whoever violates this section or a rule or regulation made under the following section shall be punished by a fine of not less than fifty nor more than one thousand dollars.

[1919, c. 303, Sects. 1, 3.]

*Rules and Regulations.*

SECT. 55. The department shall make rules and regulations governing the construction, use and maintenance of tanks to which the preceding section applies. Such rules and regulations shall not take effect until approved by the governor and council, and filed in the office of the state secretary.

[1919, c. 303, Sect. 2.]

Department of Public Safety may make rules for keeping, storage or use of crude petroleum or any of its products. [See Sect. 10-11, Chapter 148, General Laws.]

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GENERAL LAWS, CHAPTER 149, SECTION 126.

DOORS NOT TO BE LOCKED DURING WORKING HOURS IN  
OPERATIVE BUILDINGS.

SECTION 126. No outside or inside doors of any building where operatives are employed shall be so locked bolted or otherwise fastened during the hours of labor as to prevent free egress. Any person having charge of a building or room therein any exit door of which shall be

found locked, bolted or otherwise fastened contrary to this section shall be punished by a fine of not less than twenty-five nor more than five hundred dollars or by imprisonment for not more than one year, or both.

[1884, c. 52, Sects. 1, 2; 1894, c. 481, Sects. 53, 54; R. L. 104, Sect. 40; 1909, c. 514, Sects. 93, 145; 1914, c. 566.]

## GENERAL LAWS, CHAPTER 184.

### GENERAL PROVISIONS RELATIVE TO REAL PROPERTY.

#### *Proceedings Affecting Title to Realty Binding on Third Parties, When.*

SECTION 15. A writ of entry or other proceeding, either at law or in equity, which affects the title to real property or the use and occupation thereof or the buildings thereon, shall not have any effect except against the parties thereto, their heirs and devisees and persons having actual notice thereof, until a memorandum containing the names of the parties to such proceeding, the court in which it is pending, the date of the writ or other commencement thereof, the name of the town where the real property liable to be affected thereby lies and a description of such real property sufficiently accurate for identification is recorded in the registry of deeds for the county or district where such real property lies; but this section shall not apply to attachments, levies of execution or proceedings in the probate courts.

[1877, c. 229, Sects. 1, 3; P. S. c. 126, Sect. 13; 1897, c. 463; R. L. 134, Sect. 12.]

## GENERAL LAWS, CHAPTER 272.

### STABLES — EXITS.

SECTION 86. Whoever stables a horse or mule on the second or any higher floor of any building, unless there



are two means of exit therefrom, at opposite ends of the building, to the main or street floor, unless such building is equipped with an automatic sprinkler system, shall be punished by a fine of not more than two hundred dollars.

[1916, c. 158, Sects. 1-3.]

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## REVISED ORDINANCES 1914, CHAPTER 8.

### BUILDING DEPARTMENT.

SECTION 1. The building department shall be under the charge of the building commissioner, who shall exercise the powers and perform the duties provided by statute, and may appoint not exceeding thirty building inspectors for duty in his department.

[St. 1907, c. 550; St. 1914, c. 782 and c. 795.]

### BOARD OF APPEAL.

SECT. 2. There shall be in the building department a board of appeal consisting of five members, who shall exercise the powers and perform the duties provided by statute.

[St. 1907, c. 550, Sects. 6 and 7.]

### BOARD OF EXAMINERS.

SECT. 3. There shall be in the building department a board of examiners, consisting of three members, who shall exercise the powers and perform the duties herein-after provided. Each member shall receive ten dollars for every day or part thereof of actual service but not more than one thousand dollars in any year.

### *Examinations.*

SECT. 4. The board shall hold examinations, under reasonable rules and regulations adopted by it, of persons desiring to be registered as qualified to have charge or control of the construction, alteration, removal, or tearing

down of buildings or structures. Due notice of such examinations shall be posted in the offices of the building department and of the board of examiners and published in the City Record.

*Registration.*

The board shall establish various classes of persons to be registered, shall determine the qualifications required for each class, and after examination shall register in each class the persons found to possess the requisite qualifications therefor. The name and address of each person so found to be qualified, with the designation of the class in which he is registered, shall thereupon be certified by the board to the building commissioner who shall make a record of the same which shall be open to public inspection.

*Qualifications of Persons in Control of Building Operations.*

SECT. 5. All work of construction, alteration, removal or tearing down of buildings or structures in the city of Boston shall, hereafter, be under the charge, control and personal supervision of a licensed mechanic, qualified by education, training or experience for the performance of that duty in a manner which shall preserve public safety and conform to the laws, ordinances, rules and regulations relating to the construction, alteration, removal or tearing down of buildings and structures in the city of Boston.

[R. O. 1914, c. 8; Ord. 1920, c. 10; Ord. 1921.]

*Permits to Persons Licensed.*

SECT. 6. The qualifications of such persons shall be determined by the board of examiners, and no permit for the doing of work described in section five of this chapter shall be issued by the building commissioner unless the application for a permit therefor contains the name, address and signature of a person who is duly licensed, as herein provided, to take personal charge or control of

such work; provided, however, that a permit may be granted if no person licensed as aforesaid has been named in the application therefor whenever the work in question is of minor importance, and, in the opinion of the building commissioner, stated in writing with his reasons therefor upon the application for such permit, the work is of such simple character that its execution will not endanger the safety of the public, or of any person engaged thereon.

*Exemption from Examination.*

SECT. 7. Any person who shall by affidavit, together with such other evidence as may be required by the board, show to the board that he has had charge or control of the construction, alteration, removal or tearing down of buildings or structures in the class in which he applies to be registered, and shall satisfy the board that he is qualified by education, training or experience to have charge or control of such work, may, without any other examination, be registered in such class and be certified to the building commissioner as a person qualified within such class.

*Fees for Building Licenses.*

SECT. 8. The board shall issue a license to each person so certified by the board to the building commissioner. All licenses hereafter issued, or issued less than one year prior to the passage of this ordinance shall expire in one year from the date of issuance; and all licenses issued more than one year prior to the passage of this ordinance shall expire on the date in the year 1921 corresponding to the date in the year of issuance. The board may renew a license upon any expiration thereof, for the further period of one year from the date of renewal, with or without re-examination, as the board may determine. The fees to be paid to the board for such licenses and renewals shall be as follows: new license — five (5) dollars; and each

yearly renewal thereof two (2) dollars. The first renewal of a license heretofore granted — five dollars and each yearly renewal thereof two (2) dollars. Special license — one (1) dollar. The fees received by the board shall be paid to the city collector at least once a week.

*Revocation of License.*

SECT. 9. A person who has been duly licensed as aforesaid shall be entitled to have charge or control of any work described in section five of this chapter, in the class in which he is registered, until his license is revoked or suspended by the building commissioner upon the order of the board. No license shall be revoked or suspended except upon proof of charges, filed with the board by the building commissioner or other person, specifying that the licensee has been careless or negligent in the performance of his duty in connection with work under his charge or control, or has caused or permitted a violation of the building laws in connection therewith, or that such laws have been violated in connection with such work when the licensee knew, or, in the exercise of due diligence, should have known, that such violation had occurred. Upon learning of such carelessness, or neglect of duty, or of such violation of law, the building commissioner shall file charges with the board and prosecute the same. Upon the filing of such charges by the building commissioner or other person, the board shall give to the licensee notice of a hearing upon the charges which shall be held by the board not less than seven days after the date of said notice. The notice shall be by personal service or by registered mail, and shall state the time and place of the hearing and contain a copy of the charges. At such hearing the licensee may be represented by counsel, and the building commissioner may be assisted by a representative of the law department of the city.



*Stopping Work.*

SECT. 10. If, for any cause, a person licensed as herein provided shall cease to have charge or control of any work described in section five of this chapter before such work is finished, the work shall stop until another person duly licensed for the doing of such work has been placed in charge thereof.

*Penalty.*

SECT. 11. Whoever violates any provision of sections five, eight or ten of this chapter shall be punished by a fine of not more than fifty dollars for each offence.

[1920 Ord. amending Sect. 8. Ordained by authority of c. 713, Acts of 1912.]

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## CHAPTER 41, REVISED ORDINANCES OF 1914.

## BUILDING LIMITS.

*In the Year One Thousand Nine Hundred and Thirteen.  
Be it ordained by the City Council of Boston, as follows:*

SECTION 1. The building limits referred to in section nine of chapter five hundred and fifty of the acts of the year 1907 are hereby extended, defined and established as follows:

All that portion of the city which is included within a line beginning at the intersection of the boundary lines between the City of Boston and the cities of Somerville and Everett; thence by the boundary lines between the City of Boston and the cities of Everett and Chelsea to the intersection with the centre line of Trumbull street extended northerly; thence by said centre line of Trumbull street extended, the centre line of Trumbull street and said centre line extended southerly to the Harbor line; thence by said Harbor line to its intersection with the easterly line of Pier No. 5 belonging to the Boston

and Albany Railroad Company; thence by a straight line across Boston Harbor to its intersection with the Harbor line at the easterly corner of Pier No. 1 in South Boston; thence by the Harbor line in the northerly, easterly and southerly portions of South Boston to an angle in said Harbor line nearly opposite the intersection of the centre line of Columbia road with the centre line of location of the Old Colony Railroad; thence by a straight line to the said intersection; and by the centre lines of Columbia road, Blue Hill avenue, Seaver street, Columbus avenue, Atherton and Mozart streets, Chestnut avenue, Sheridan, Centre and Perkins streets, South Huntington avenue, Castleton street and the centre line of said Castleton street extended to the boundary line between the City of Boston and the town of Brookline; thence by said boundary line to a point therein one hundred feet southwest of Washington street in the Brighton district; thence by a line parallel to and one hundred feet southwesterly from the centre line of Washington street to an angle formed by the intersection of said line with the extension of a line parallel to and one hundred feet northwesterly of the centre line of Market street; thence by said extension and said line parallel to and one hundred feet northwesterly of the centre line of Market street to a point one hundred feet south of the centre line of Western avenue; thence by a line parallel to and one hundred feet south of the centre line of Western avenue and said line extended to a point in the boundary line between the City of Boston and the town of Watertown south of Watertown Bridge, so called; thence by said boundary line and the boundary lines between the cities of Cambridge and Somerville to the point of beginning.

Also those portions of Ward 26 upon or within one hundred feet of the following named streets and squares:

Everett square, so called; Fairmount avenue from River street to the Neponset river; River street from the location of the Boston & Providence Railroad to Winthrop street; Hyde Park avenue on the easterly side from the northerly side of Oak street to Everett street; Hyde Park avenue on the westerly side from the northerly side of Pine street extension, so called, to a point on said Hyde Park avenue opposite the southerly line of Everett street; Harvard avenue from River street to Winthrop street; Maple street from River street to a point one hundred and eighty feet southerly therefrom; Central avenue from River street to Winthrop street; Davison street from Fairmount avenue to a point three hundred feet northeasterly therefrom; Grove street; Pierce street from Fairmount avenue to a point three hundred feet northeasterly therefrom; Knott street from Fairmount avenue to a point three hundred feet easterly therefrom; Railroad avenue from Fairmount avenue to a point three hundred feet northeasterly therefrom; Station street from the Neponset river to a point three hundred feet northeasterly from Fairmount avenue; Walnut street from Fairmount avenue to a point three hundred feet southwesterly therefrom; Maple street from Fairmount avenue to a point one hundred and twenty-five feet westerly therefrom.

This ordinance became operative July 1, 1914.

1907, c. 550, Sect. 9; 1914, c. 782, Sect. 1; Ord. 1914, c. 4, Sect. 1.]

**LAWS RELATING TO GAS  
FITTING.**





# GAS FITTING LAWS.

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## CHAPTER 265, ACTS OF 1897.

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AN ACT RELATIVE TO THE LICENSING OF GAS FITTERS  
AND TO THE SUPERVISION OF THE BUSINESS OF GAS  
FITTING IN THE CITY OF BOSTON.

*Be it enacted, etc., as follows:*

*License Required — "Journeyman" Means.*

SECTION 1. No person, firm or corporation shall engage in or work at the business of gas fitting in the city of Boston after the first day of October in the year eighteen hundred and ninety-seven, either as employer or as a journeyman, unless such person, firm or corporation has received a license therefor in accordance with the provisions of this act. The word "journeyman," as used in this act, shall be deemed to mean one who personally does any gas fitting or any work in connection therewith which would be subject to inspection under the provisions of this act.

*Examination Required — As to Qualifications.*

SECT. 2. Every person, firm or corporation desiring to engage in the business of gas fitting in the city of Boston shall make application therefor to the building commissioner, and shall at such time and place as may be designated by the board of examiners hereinafter provided for, to whom such application shall be referred, be examined as to his qualifications for such business.

*Board of Examiners.*

SECT. 3. The board of examiners shall consist of the building commissioner, the chairman of the board of health, who shall be *ex officio* members of said board and serve without compensation, and a third member, to be chosen by the board of health, who shall be a practical gas fitter of at least five years' continued practical experience during the years next preceding the date of appointment. Said third member shall be chosen within thirty days after the passage of this act, for a term ending on the first day of May in the year eighteen hundred and ninety-eight, and thereafter annually; and he shall be allowed a sum not exceeding five dollars for each day of actual service, to be paid from the treasury of the City of Boston.

*Date and Places for Holding Examinations.**Practical Knowledge Required.**Licenses — Fees for Same.*

SECT. 4. Said board of examiners shall, as soon as may be after the appointment of said third member, meet and organize by the selection of a chairman and clerk, and shall then designate the times and places for the examination of all applicants desiring to engage in or work at the business of gas fitting in the city of Boston. Said board shall examine said applicants as to their practical knowledge of gas fitting, shall submit the applicant to some satisfactory form of practical test, and, if satisfied of the competency of the applicant, shall so certify to the building commissioner, who shall thereupon issue a license to such applicant, authorizing him to engage in or work at the business of gas fitting, first requiring him to register in the office of the said building commissioner his name, place of business or residence, license number, date of examination, and in

what capacity licensed. In case of a firm or corporation, the examination of one member of the firm, or of the manager of the corporation, shall satisfy the requirements of this act. The fee for the license of any employing gas fitter shall be two dollars, and for a journeyman, fifty cents; and said license shall continue in force until revoked or cancelled, but shall not be transferable.

*Inspectors of Gas Fitting.*

*Duties — Compensation — Cause of Removal.*

SECT. 5. The building commissioner shall appoint, after the first day of October in the year eighteen hundred and ninety-seven, such a number of inspectors of gas fitting as the board of examiners may from time to time determine. Said inspectors shall be practical gas fitters of at least five years' continued practical experience, and shall, before appointment, be subject to an examination before the civil service commissioners. The compensation of said inspectors shall be determined by the building commissioner, subject to the approval of the mayor; and such inspectors shall hold office until removed by said commissioner, with the approval of the mayor, for malfeasance, incapacity or neglect of duty. Said inspectors shall inspect all new work relating to gas fitting in new and in old buildings, the connections and use of such work, and shall report all violations of this act or of any act or ordinance relating thereto, which now exists or may be hereafter enacted or ordained; and they shall also perform such other appropriate duties as may be required by the building commissioner.

*License Number to be Displayed at Place of Business.*

SECT. 6. Every licensed gas fitter shall display his license number conspicuously at his place of business.



*Application to be Filed and Permit Required.**Materials and Workmanship Subject to Regulations.*

SECT. 7. On and after the first day of October in the year eighteen hundred and ninety-seven no building shall be piped or fitted for gas, nor shall any repairs be made in such pipings or fittings, nor fixtures placed, unless a permit shall be granted therefor by the building commissioner. Every licensed gas fitter desiring to perform any work relating to piping or fitting a building for gas, or to repair gas piping or fittings, or to place fixtures therein, shall file an application therefor at the office of the building commissioner, giving the correct location, name and address of the owner, the intended use and material of the building and a full and complete statement of the work proposed and material to be used, and shall, if required by said building commissioner, furnish a plan thereof, which shall be subject to his approval. All materials used and work performed under the provisions of this section shall be subject to such regulations as shall be made by the board of health and the building commissioner.

*Timbers, Beams or Girders Not to be Cut Into.**Meter to be Removed Only by Gas Company.*

SECT. 8. No gas pipe which may be introduced into any building shall be let into the timbers, beams or girders, unless the same is placed within thirty-six inches of the end of said timber, beam or girder, and in no building shall the said pipes be let into the timbers, beams or girders more than two inches in depth. No person shall disconnect or remove any gas meter, except the duly authorized representative of the gas company owning such meter.

*Gas Brackets.*

SECT. 9. All gas brackets shall be placed at least three feet below any ceiling or woodwork, unless the same is

properly protected by a shield, in which case the distance shall not be less than eighteen inches. Nothing in this act shall be construed to affect the operations of any gas company upon its own premises or upon its mains and surface pipes.

*Board of Health to Inspect Gas Fixtures and Appliances in Buildings.*

SECT. 10. The Board of Health of said city by its inspectors shall from time to time, as it deems proper, inspect the gas fixtures and appliances in any building and shall make such requirements relating thereto as it deems the public health requires, and the owner of such building shall comply with such requirements.

*Penalty for Violation of this Act.*

SECT. 11. Any person violating any of the provisions of this act shall be deemed guilty of a misdemeanor and shall be subject to a fine of not exceeding one hundred dollars for each offence, and if such person has received a license under this act his license may be revoked by the building commissioner.

*Annual Report*

SECT. 12. The building commissioner shall include in his annual report to the city council a report of the proceedings of the building department under this act, and shall include therein a report of the board of examiners appointed under this act, giving their proceedings during the year ending on the first day of February.

*Repeals.*

SECT. 13. All acts and parts of acts inconsistent herewith are hereby repealed.

SECT. 14. This act shall take effect upon its passage, except so far as is hereinbefore otherwise provided.

[Approved April 10, 1897.]

## REVISED REGULATIONS.

PERTAINING TO GAS FITTING AND GAS FITTING MATERIALS,  
ADOPTED JULY 29, 1898, BY THE BOARD OF HEALTH  
AND THE BUILDING COMMISSIONER, TO TAKE EFFECT  
OCT. 1, 1898. — AMENDED AUG. 16, 1899. — AMENDED  
MARCH 12, 1918.

*(Authorized by Chapter 265, Acts of 1897.)*

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*Notice of Repair of Leaks.*

SECTION 1. In all cases of repair of leaks, a notice giving the location and extent of all work performed shall be filed with the building commissioner immediately upon completion of the same.

*No Pipe or Fitting to be Concealed Until Approved.*

SECT. 2. No pipe or fitting shall be covered or concealed from view until approved by one of the gas fitting inspectors of the building department, or for twenty-four hours after notice has been given to the building commissioner.

*No Pipe to be Laid Subjected to Strain.*

SECT. 3. Pipes shall be run and laid to avoid any strain or weight on the same, except that of the fixtures.

*Outlets. — Number of Burners.*

SECT. 4. Outlets for fixtures shall be securely fastened; all outlets not covered by fixtures shall be left capped, and the number of burners for each outlet shall be marked on the builders' plan.

*Pipes to be Properly Protected.*

SECT. 5. Pipes laid in a cold or damp place shall be properly dripped, painted with two coats of red lead and

boiled oil, or covered with felting satisfactory to the building commissioner.

*Swing Brackets.*

SECT. 6. Swing brackets shall have a globe or guard to prevent its burner from coming in contact with the wall. Bracket outlets shall be at least 2 inches from window or door casings.

*Stop-Pins.*

SECT. 7. Stop-pins to cocks shall be screwed into place.

*Cement Prohibited.*

SECT. 8. The use of gas fitters' cement is prohibited, except in putting fixtures together.

*Inside Service to be Tested.*

SECT. 9. Inside services shall be tested by the fitter who receives the permit to connect the service or meter,

*Service Pipe to have Main Cock.*

SECT. 10. There shall be a main cock on the service-pipe close to the foundation wall, one cock at the inlet side and one at the outlet side, of each meter. When service pipes are over two inches brass or composition, seated valves shall be used.

*Final Test to be Made by Gas Fitter in Presence of Inspector.*

SECT. 11. There shall be a final test, by a gas fitter, of all fixtures and pipes by a column of mercury raised not less than two inches, which must stand five minutes; this test to be made in the presence of one of the gas-fitting inspectors of the building department; the gauge to be made of glass tubing of uniform interior diameter, and so constructed that both surfaces of the mercury will be exposed.



*Material of Gas-Pipe.*

SECT. 12. All gas-pipes shall be of wrought iron or steel, all fittings of malleable iron, and all meter connections of lead pipe of the same size as the fit or riser except where meters are to be connected with flanges.

*Brass Nipples.*

SECT. 13. Brass solder nipples shall be used on all meter connections.

*Risers.*

SECT. 14. No riser shall be left more than five feet away from the front foundation wall.

SECT. 15. Gas-pipes shall be run in according to the following scale:

*Scale for Piping.*

Iron pipe, $\frac{3}{8}$ inch,	26 feet,	3 burners.
" $\frac{1}{2}$ inch,	30 feet,	6 burners.
" $\frac{3}{4}$ inch,	50 feet,	20 burners.
" 1 inch,	70 feet,	35 burners.
" $1\frac{1}{4}$ inches,	100 feet,	60 burners.
" $1\frac{1}{2}$ inches,	150 feet,	100 burners.
" 2 inches,	200 feet.	200 burners.
" $2\frac{1}{2}$ inches,	300 feet,	300 burners.
" 3 inches,	450 feet,	450 burners.
" $3\frac{1}{2}$ inches,	500 feet,	600 burners.
" 4 inches,	600 feet,	750 burners.

*Outside Piping of Brass a Fixture.*

When brass piping is used on the outside of plastering or woodwork, it shall be classed as fixture.

*Outlets and Risers.*

SECT. 16. Outlets and risers not provided with fixtures shall be properly capped.

*Outlets for Fixtures.*

SECT. 17. Outlets for fixtures shall not be placed under tanks, back of doors, or within three feet of any meter.

*Shields, When Required.*

SECT. 18. Gas-burners less than two feet from a plastered ceiling or less than three feet from overhead woodwork shall be protected by a shield satisfactory to building commissioner. In first-class buildings no shields will be required.

*Brass Tubing.—Threads on Brass Pipe.—Rope or Square Tubing.*

SECT. 19. Brass tubing used for arms or fixtures shall be at least No. 18 standard gauge with full thread. All threads shall screw in at least  $\frac{5}{16}$  of an inch. Rope or square tubing shall be brazed or soldered into fittings and distributors, or have a nipple brazed into the tubing.

*Cast Fittings.—Plugs of Cocks.—Stems of Fixtures.—L-Burner Cocks.*

SECT. 20. Cast fittings such as cocks, swing joints, double centres and nozzles shall be standard fittings, except for factory use, where extra heavy or mill fittings shall be used. The plugs of all cocks must be ground to a smooth and true surface for their entire length, be free from sandholes, have not less than  $\frac{3}{4}$ -inch bearing on all cast fittings and  $\frac{1}{16}$  of an inch on all turned fittings, have two flat sides on the end for the washer and have two nuts instead of a tailscrew. Stems of fixtures of two lights or more each shall be not less than  $\frac{1}{4}$  of an inch iron-pipe size. L-burner cocks shall not be used at the end of chandelier arms, except in stores, churches, theatres, halls, and places of assembly or public resorts.

*Outlets for Gas-Ranges.*

SECT. 21. Outlets for gas-ranges shall have a diameter not less than that required for six burners, and all gas-ranges and heaters shall have a cock on the service-pipe. Ranges and heaters must be connected with right and left couplings, except in fireplace work where brass unions may be used.

*Pipes to be Laid above Timbers.*

SECT. 22. Pipes shall be laid above timbers unless otherwise permitted by the building commissioner.

*Second-Hand Gas-Piping not Allowed.*

SECT. 23. No second-hand gas-pipe shall be put into use in any building without the written permit of the building commissioner.

*Drops or Outlets.*

SECT. 24. Drops or outlets less than  $\frac{3}{4}$  of an inch in diameter shall not be left more than  $\frac{3}{4}$  of an inch below plastering, centre-piece, or woodwork, and other outlets shall not project more than  $\frac{3}{4}$  of an inch beyond plastering or woodwork.

*Outlets, How Fastened.*

SECT. 25. Fastening boards shall not be cut away to accommodate electric wires. All outlets shall be fastened according to the following diagrams:

*Weight of Gas-Pipes in Pounds per Foot.*

SECT. 26. Gas-pipes, all arms and stems of fixtures shall be of the kind classed as standard pipe, and shall weigh according to the following table:

Size of Pipe.	Pounds Per Foot
$\frac{1}{8}$ -inch pipe . . . . .	.24
$\frac{1}{4}$ -inch pipe . . . . .	.42
$\frac{3}{8}$ -inch pipe . . . . .	.56
$\frac{1}{2}$ -inch pipe . . . . .	.85
$\frac{3}{4}$ -inch pipe . . . . .	1.12
1-inch pipe . . . . .	1.67
1 $\frac{1}{4}$ -inch pipe . . . . .	2.24
1 $\frac{1}{2}$ -inch pipe . . . . .	2.68
2 -inch pipe . . . . .	3.61
2 $\frac{1}{2}$ -inch pipe . . . . .	5.74
3 -inch pipe . . . . .	7.54
3 $\frac{1}{2}$ -inch pipe . . . . .	9.00
4 -inch pipe . . . . .	10.66

*No Gas Pipe to be Laid within Six Inches of Electric Wire.*

SECT. 27. No gas pipe shall be laid within 6 inches of an electric wire, except where the electric wire is in an insulated conduit.

*Spark or Self-Lighting Burners to be Tested with Mercury Test.*

SECT. 28. Wherever spark-lighting or self-lighting burners are used the mercury test shall be applied to the cocks.

*Gas Engines.*

SECT. 29. (a.) Gas engines must be connected to service from which no gas for illuminating purposes is used.

*Exhaust Pipes.*

(b.) Exhaust pipes shall be run to roof when possible, not come in contact with woodwork, and be properly protected.



*Diaphragms and Bags.*

(c.) Diaphragms and bags must be on the same floor with engine and have a valve governing same.

*Size of Pipes Connecting Gas Engines.*

(d.) The sizes of pipes used in connecting gas engines will be as follows:

Horse Power.	Feet Per Hour.	Burners.	Size (in inches).	Length (in feet).
1	40	10	$\frac{3}{4}$	50
2	80	20	$\frac{3}{4}$	50
3	120	30	1	70
4	160	40	$1\frac{1}{4}$	100
5	200	50	$1\frac{1}{4}$	100
6	240	60	$1\frac{1}{4}$	100
7	280	70	$1\frac{1}{2}$	150
8	320	80	$1\frac{1}{2}$	150
9	360	90	$1\frac{1}{2}$	150
10	400	100	$1\frac{1}{2}$	150
11	440	110	2	200
12	480	120	2	200
13	520	130	2	200
14	560	140	2	200
15	600	150	2	200
16	640	160	2	200
17	680	170	2	200
18	720	180	2	200
19	760	190	2	200
20	800	200	2	200
21	840	210	$2\frac{1}{2}$	300
22	880	220	$2\frac{1}{2}$	300
23	920	230	$2\frac{1}{2}$	300
24	960	240	$2\frac{1}{2}$	300
25	1,000	250	$2\frac{1}{2}$	300
26	1,040	260	$2\frac{1}{2}$	300
27	1,080	270	$2\frac{1}{2}$	300

*Gas Not to be Turned on Until Piping and Fixtures  
Approved.*

SECT. 30. Gas shall not be turned on in any building until the piping and fixtures have been approved by the building commissioner.

*Connections with Gas Appliances.*

SECT. 31. No connection for any gas appliance shall be made to any gas fixture on which any part of the piping thereon shall be less than three-eighths inch.

*Rubber or Flexible Tubing not Allowed.*

SECT. 32. Any gas appliance having a controlling gas cock on the same will not be approved by the Building Department if connected with rubber or flexible tubing.

*Hose Cock and Independent Fitting.*

SECT. 33. No hose cock or independent fitting that controls the gas supply to any appliance shall be nearer than six inches to any other cock.

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CHAPTER 550, ACTS OF 1907.

*Gas Fitting — Definition of.*

SECTION 11. Gas fitting shall mean the work of putting together any fittings, pipes, or fixtures or other appliances which are to contain gas for heat, light or power purposes and will be subject to inspection under existing laws.



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# INDEX.

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# INDEX.

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Acts of 1907, Chapter 550, and Amendments thereto and General Laws, General and Special Acts relating to the erection, maintenance, inspection and occupation of buildings.

References in this Index are to Pages, Sections and Paragraphs of the Law as amended and in force.

NOTE.—When an asterisk (\*) is placed before a figure, see, also, regulations of 1914 as amended in 1915 for escalators and elevators for the Commonwealth of Massachusetts.

When a dagger (†) is placed before a figure, see sects. 62 to 71, inclusive, chap. 143, General Laws.

Where comma (,) is added it refers to distinct Pages, Sections, Paragraphs.

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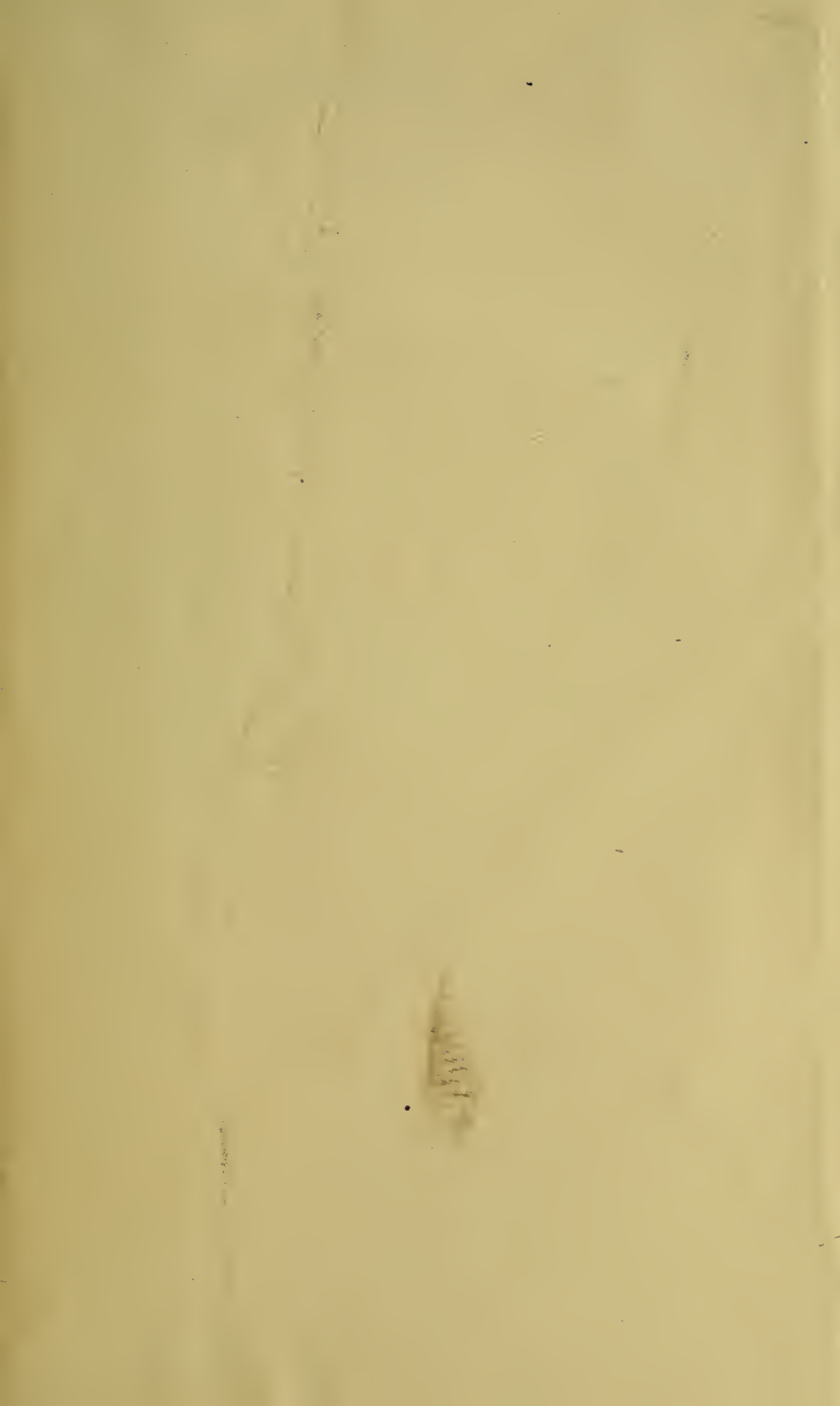
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